



**Report
C12749**

**Groundwater Information Review
Blackhawk Facility
Beloit Corporation
Rockton, Illinois**

Prepared for:
**Beloit Corporation
Beloit, Wisconsin**

Prepared by:
**Warzyn Engineering Inc.
Madison, Wisconsin**



**Groundwater Information Review
Blackhawk Facility
Beloit Corporation
Rockton, Illinois**

November, 1986



Engineers & Scientists
Environmental Services
Waste Management
Water Resources
Site Development
Special Structures
Geotechnical Analysis

November 26, 1986
C 12749

Mr. Doug McLeish
Beloit Corporation
1 St. Lawrence Avenue
Beloit, WI 53511

Re: Groundwater Information Review
Beloit Corporation Blackhawk Facility
Rockton, Illinois

Dear Mr. McLeish:

Attached is the final copy of the Groundwater Information Review Report for the Beloit Corporation's Blackhawk Facility. The report presents Warzyn's evaluation of the information pertaining to volatile organic compounds in the groundwater in the vicinity of the Blackhawk facility. Recommendations for further evaluation are included in the report.

Sincerely,

WARZYN ENGINEERING INC.

Alan J. Schmidt
Project Hydrogeologist

Roger C. Cooley, P.E.
Project Manager

AJS/pjs/RCC
[adf-53-8]

Enclosures: As Stated (5 copies)

cc: Mr. Jeff Cooke - Beloit Corporation (w/1 enclosure)

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SECTION 1
SUMMARY AND RECOMMENDATIONS

GROUNDWATER INFORMATION REVIEW
BELOIT CORPORATION
BLACKHAWK FACILITY
ROCKTON, ILLINOIS

SECTION 1 - SUMMARY AND RECOMMENDATIONS

The following summary contains conclusions and recommendations for further investigation resulting from Warzyn's evaluation of existing information pertaining to volatile organic compounds (VOCs) detected in groundwater near the Blackhawk Facility

A. Conclusions

1. Existing hydrogeological data reviewed included information contained in Illinois Environmental Protection Agency (IEPA), Winnebago County Health Department, and Warzyn files.
2. The site is located in an area of glacial outwash deposits consisting primarily of sand and gravel. Clay deposits are present near the northern end of Watts Drive and at IEPA Well G-103D.
3. Private water supply wells located along southern Watts Drive withdraw water from the sand and gravel aquifer and are typically approximately 60 ft deep.
4. Groundwater in the sand and gravel aquifer apparently flows away from a groundwater high centered near the intersection of Illinois State Highway 2 and Prairie Hill Drive. Groundwater beneath the Blackhawk Facility property generally flows toward the south, southwest and west.

5. No VOCs have been detected since February 1984 at Well W-2 located between the Blackhawk Facility and homes along southern Watts Drive. No VOCs were detected at Wells W-4, W-6, W-7, W-8, W-9 or W-10 when these wells were sampled on May 17, 1984.

VOCs have been detected on Beloit Corporation property at Wells W-3 (trichloroethylene and 1,1,1-trichloroethane on May 5, 1986) and W-5 (trichloroethylene and 1,1,1-trichloroethane on May 17, 1984). VOCs have also been detected at Well W-1 (1,1,1-trichloroethane and 1,1-dichloroethane).

6. VOCs (primarily 1,1,1-trichloroethane, 1,1-dichloroethane, trans 1,2-dichloroethylene and 1,1-dichloroethylene) have been detected by the IEPA and Winnebago County Health Department at private water supply wells located along southern Watts Drive.
7. No VOCs were detected at IEPA Wells G-103S and G-103D located between the Blackhawk Facility and homes along southern Watts Drive. VOCs (1,1,1-trichloroethane, 1,1-dichloroethane, tetrachloroethylene and trichloroethylene) were detected at IEPA Well G-104, located southwest of Beloit Corporation Wells W-3 and W-5.
8. No VOCs were detected in the three United Recovery water supply wells, sampled by the IEPA on June 22, 1982. The well which was in use at the time of sampling was reportedly constructed in bedrock and is therefore deeper than nearby private water supply wells. The other two wells are

reportedly deeper than 80 ft and were not in use at the time the sampling occurred. These two wells were not purged prior to sampling and therefore the samples may not be representative of actual groundwater quality.

9. The VOCs present in Beloit Corporation Monitoring Wells W-3 and W-5 do not appear to be related to landspreading of fibrous sludge which occurred in the open field to the east of the wells. The source of VOCs at these two wells is unknown.
10. The source of VOCs in private water supply wells located along southern Watts Drive is unknown. There is no evidence suggesting groundwater containing VOCs is leaving beneath the eastern property boundary of the Blackhawk Facility and moving toward the private water supply wells along southern Watts Drive.
11. Documented environmentally unsound operational practices at the United Recovery Facility (and prior to that Soterion Inc.) suggests the facility warrants further evaluation as a potential source of VOCs in groundwater.
12. There is very limited information regarding the contamination in this area. Few sampling points and limited rounds of sampling were utilized by IEPA in their assessment.

Recommendations

1. A soil gas sampling program be conducted in the vicinity of Wells W-3 and W-5 to evaluate the horizontal extent of VOCs in groundwater in

this vicinity and assess the source. However, as Table 2 indicates, VOC concentrations at Well W-3 have decreased over time and soil gas sampling may not be effective if VOC levels have decreased further.

2. Install monitoring well(s) at locations in the vicinity of Well W-3 based on the soil gas program to define the VOC levels in this area.
3. Continued monitoring of Well W-1 to evaluate the presence of VOCs at that location.
4. A soil gas sampling program along the eastern property boundary of the Beloit Corporation would help assess the potential for the presence of VOCs between Wells W-2, W-4 and W-10.

SECTION 2
INTRODUCTION

SECTION 2 - INTRODUCTION

This report presents the results of Warzyn's evaluation of available information pertaining to volatile organic compounds (VOCs) present in groundwater in the vicinity of the Blackhawk Facility, north of Rockton, Illinois. The objective of the evaluation was to review existing hydrogeological data, including information contained in Illinois Environmental Protection Agency (IEPA), Winnebago County Health Department and Warzyn files.

The following information was reviewed:

1. Site specific and regional groundwater flow patterns;
2. Hydrogeology and potential contaminant transport pathways;
3. Historical groundwater quality information; and
4. Available private water supply well construction reports.

SECTION 3
DISCUSSION OF SITE CHARACTERISTICS

SECTION 3 - DISCUSSION OF SITE CHARACTERISTICS

1. Site Location

The Beloit Corporation's Blackhawk Facility is located in the Southern 1/2 of Section 12 and Northern 1/2 of Section 13, Township 46 North, Range 1 East, Town of Rockton, Winnebago County, Illinois (see Drawing C 12749-A1). The facility is bounded on the west by the Rock River, on the east by the Milwaukee, St. Paul and Pacific Railroad, on the north by Prairie Hill Road and on the south by privately owned property.

A number of homes are located along Watts Drive, Blackhawk Boulevard, Dingman Drive, Central Drive and Kile Drive east of the facility. The defunct United Recovery Facility (previously Soterion Inc.) is located at the southern end of Watts Drive. The United Recovery Facility reclaimed high speed steel cuttings and the associated cooling oil.

2. Geology

Subsoils in the vicinity of Beloit Corporation property are glacial outwash deposits consisting mainly of stratified sand and/or sand and gravel. The site is located in the ancestral Rock River/Pecatonica River (bedrock) valley. The outwash deposits are approximately 150 to 250 ft thick and overly rocks of Ordovician age (primarily limestone/dolomite and sandstone). Soil borings performed on Beloit Corporation property (see Drawing C 12749-1 for locations) indicate subsoils consist primarily of silty sand (SM) and silty gravel and sand (soil boring logs are contained in Appendix A).

The soil boring performed by the IEPA to install Wells G-103S and G-103D encountered a sandy clay layer at 35 to 49 ft (IEPA boring logs are contained in Appendix B). These two wells are located approximately 200 ft north of the defunct United Recovery facility (see Drawing C 12749-1). No clay layers were encountered in soil borings performed along the eastern Beloit Corporation property boundary.

3. Groundwater Flow

The general groundwater flow direction beneath the southern portion of Beloit Corporation property is toward the south-southwest as shown on Drawing C 12749-1. Groundwater north of the Blackhawk Plant flows in a westerly direction toward the Rock River. Drawing C 12749-1 presents a water table map constructed using water level measurements obtained by the IEPA on July 16, 1986 (see Appendix C for water levels). However, localized variations in the groundwater flow direction may exist in the vicinity of private water supply wells along Watts Drive and near the Blackhawk Facility water supply well as a result of the cones of depression associated with the pumping wells. Potential groundwater mounding associated with disposal of liquids in the septic system and dry wells at the United Recovery Facility may also have affected the groundwater flow system. The water table surface near the southeastern Beloit Corporation property boundary (adjoining the Trull property) is relatively flat. The Rock River may recharge the groundwater system in the area south of the Beloit Corporation's property based on the available data. In general, there appears to be several local factors that are influencing groundwater flow in this area. Drawing C 12749-1 presents probable regional flow conditions which would need further definition to assess potential water contamination flow paths.

4. Watts Drive Private Water Supply Wells

The water supply wells located along southern Watts Drive are approximately 60 ft deep and are generally screened in sand and gravel according to Bloyer Well Company, a well drilling company that has drilled a number of wells in the area. Available well construction reports are contained in Appendix D and are summarized on Table 1. The well construction report for 409 Dingman Drive is the only one available for the private water supply wells sampled and indicates the aquifer is sand and sand and gravel to a depth of 60 ft.

Bloyer Well Company indicated clay is present near the northern end of Watts Drive. Wells in this area may be drilled deeper as evidenced by the well at the Rockton Area Community Health Center which draws from the sandstone aquifer at a depth of 240 to 280 ft.

5. Groundwater Quality

a. Blackhawk Facility

A summary of volatile organic compounds (VOCs) detected in samples from monitoring wells at the Beloit Corporation Blackhawk Facility is presented on Table 2. VOCs (trichloroethylene and 1,1,1-trichloroethane on May 5, 1986) have been detected at Well W-3 located southwest of the facility. These same VOCs were detected at deeper Well W-5 on May 17, 1984. Apparently water quality has improved at Well W-3 based on decreases in tetrachlorethylene, 1,1,1-trichloroethane, 1,1-dichloroethylene and methylene chloride noted since the February 1984 sampling. Trichloroethylene, 1,1,1-trichloroethane, 1,1-dichloroethane and methylene chloride have been detected at Well W-1. Groundwater quality also appears to have improved at this well based on the May

1985 and May 1986 samplings. No VOCs were detected at Well W-1 during May 1985 although low levels of 1,1,1-trichloroethane (5.3 ug/L) and 1,1-dichloroethane (7.9 ug/L) were detected during the May 1986 sampling. No VOCs were detected at Wells W-4, W-6, W-7, W-8, W-9 or W-10 when they were sampled on May 17, 1984.

No VOCs have been detected at Well W-2 since one compound (methylene chloride) was detected during the February 1984 sampling. Well W-2 is located between the Blackhawk Facility and the southern Watts Drive private water supply wells. Methylene chloride was detected at Wells W-1 and W-2 during the first sampling. It has not been detected since and was probably a laboratory induced contaminant.

b. Watts Drive Private Supply Wells

A summary of volatile organic compounds detected in private water supply wells along southern Watts Drive is presented in Table 3. VOCs have been detected by the IEPA and Winnebago County Health Department at the following residences:

- 908 N. Blackhawk (during May 1984 only)
- 905 Watts Avenue (Marx)
- 909 Watts Avenue (Johnson)
- 910 Watts Avenue (Hayter)
- 913 Watts Avenue (Jones; During May and December 1982 only)
- 914 Watts Avenue (Altenberg)
- 918 Watts Avenue (McHone)
- 1004 Watts Avenue (Lowery)

The primary VOCs present in these wells are 1,1,1-trichloroethane, 1,1-dichloroethane; tetrachloroethylene, trans-1,2-dichloroethylene and 1,1-dichloroethylene.

c. IEPA Monitoring Wells

VOCs were not detected in samples obtained by the IEPA from Wells G-103S and G-103D. This well nest is located between Beloit Corporation Well W-2 and private water supply wells along southern Watts Drive.

1,1,1-trichloroethane (90 ppb) tetrachloroethylene (4 ppb), trichloroethylene (10 ppb) and 1,1-dichloroethane (15 ppb) were detected at Well G-104 by the IEPA. Well G-104 is located southwest of Beloit Corporation Well W-3.

d. United Recovery Facility

One round of groundwater samples was obtained by the IEPA on June 22, 1982 from three of the four water supply wells located at the United Recovery Facility. The fourth well was not sampled. The well which was in use until the facility closed is reportedly 160 ft deep and constructed into bedrock (IEPA Special Analysis Form-Sample G201, June 24, 1982). The other two wells sampled were not being used at the time of the sampling and are located in a well pit on the south side of Building 2. Both of these wells are reportedly greater than 80 ft deep (IEPA Special Analysis Forms-Samples G202 and G202b, June 24, 1986). These two wells were not purged prior to sampling. Therefore the samples, probably are not representative of actual groundwater quality. VOCs were not detected in these three samples. No well construction reports are available for these wells. Based on available information it appears these three wells are deeper than the private water supply wells located along southern Watts Drive.

SECTION 4
POTENTIAL SOURCES OF VOCs IN GROUNDWATER

SECTION 4 - POTENTIAL SOURCES OF VOCs IN GROUNDWATER

There are a number of potential sources which may be associated with the VOCs present in Wells W-3 and G-104 and in the private water supply wells on southern Watts Drive.

1. Well W-3, W-5, G-104 Area

Wells W-3 and W-5 are located downgradient of the area where fibrous sludge landspreading has occurred. An evaluation of fibrous sludge landspreading (Warzyn, 1985) indicated chloroform (50-354 ug/kg) and trans-1,2,-dichloro-ethylene (<35-363 ug/kg) were present in samples from the fibrous sludge stockpiles. However these compounds were not detected in sample from Wells W-3, W-5 or G-104 (see Table 2). Although it does not appear landspreading of fibrous sludge is related to the VOCs in Wells W-3, W-5 and G-104, the source of VOCs in Wells W-3, W-5 and G-104 is apparently unknown.

2. Watts Drive Area

a. Old Gravel Pit

The old gravel pit is located on Beloit Corporation property between Blackhawk Boulevard and the railroad tracks on the northern edge of the site (see Drawing C 12749-1). Unauthorized dumping of household rubbish and construction debris occurred in the pit for a limited period of time. All refuse has been removed by Beloit Corporation with the exception of some concrete. The old gravel pit is an unlikely source of contamination detected at the private wells due to the limited disposal period, the nature of known materials disposed and the position of the pit in the groundwater flow system. Groundwater flowing beneath the gravel pit would likely discharge into the Rock River north of the impacted area.

b. Blackhawk Facility and Storage Yard Area

The Blackhawk Facility previously used methylene chloride and tetrachloroethylene in the operation based on conversations with plant personnel.

Apparently barrels were kept in the storage yard during the past. The contents of the barrels is unknown. The storage area presently contains scrap metal, pipe and miscellaneous equipment from the plant. No chemicals are presently stored in this area.

There is no evidence suggesting groundwater containing VOCs is leaving the Blackhawk Facility beneath the eastern property boundary. Groundwater beneath the storage yard appears to flow toward the south and southwest. Monitoring Well W-2 is located between the storage yard and the impacted private water supply wells along Watts Avenue. VOCs have not been detected in samples from Well W-2 during the last four sampling periods (see Table 2). VOCs have not been detected in samples from IEPA Wells G-103S and G-103D either. There is a slight possibility that contamination could be emanating north of Well W-2 and impacting the private wells, but this would appear to be unlikely based on the current information on groundwater flow.

c. United Recovery Facility

The abandoned United Recovery Facility (previously Soterion, Inc.) reclaimed high speed steel drill cuttings and the associated cooling oil. According to IEPA records, the material was received in barrels from plants in Wisconsin, Minnesota, South Carolina and Arkansas. The raw material was approximately 80% solids and 20% oil by weight. The solid portion consisted primarily of high speed steel powder and diatomaceous earth and grinding wheel powder.

The reclamation process separated the steel powder from the other materials. The liquid separated from the steel powder consisted of approximately 50% oil, 45% water and 5% sludge. The sludge was processed further into its constituent parts of 75% oil, 15% water and 10% diatomaceous earth. The steel powder was dried, packaged and sold to the steel industry. The diatomaceous earth was stored on-site or disposed of. According to IEPA files, approximately 16,000 to 18,000 gallons per week of process wastewater was discharged to a septic tank between Buildings 1 and 2. Based on complaints from neighbors, liquids were also discharged into dry wells located at the west end of Dingman Drive.

The IEPA obtained a number of raw material, product and waste samples from the United Recovery Facility. A summary of the samples taken and analyses performed is included in Table 4. Samples were not analyzed for VOCs based on information in the IEPA files.

The absence of VOCs in the samples from the three United Recovery water supply wells does not mean VOCs are not present at the water table surface beneath the United Recovery Facility. The sample from the bedrock well would be representative of groundwater deeper in the groundwater system. The other two wells sampled are also reportedly deeper than nearby water supply wells. In addition, improper sampling techniques (the wells were not in use at the time of sampling and were not purged prior to sampling) makes the analytical results from these two wells questionable.

Complaints submitted to IEPA and Winnebago County Health Department by nearby residents; IEPA field reports; and conversations between IEPA and the previous owners of United Recovery and Soterion Inc. indicate that oil and waste chemicals were dumped on the ground, in the septic system and in the dry wells. Although the previous owners indicated no solvents were used on the property, it is possible solvents were disposed in the septic system and/or dry wells.

The facility may be a source of VOCs present in nearby private water supply wells based on documented environmentally unsound operational practices. Although the United Recovery Facility is apparently located downgradient of the private water supply wells along southern Watts Drive based on the water table map (Drawing C 12749-1), pumping by the nearby water supply wells and potential mounding of the water table due to the volume of liquids disposed at the site, may have affected the local groundwater flow direction such that groundwater movement toward the private water supply wells may have occurred. However, no monitoring wells have been installed between the United Recovery Facility and the private water supply wells to evaluate this possibility.

Respectfully submitted,

WARZYN ENGINEERING INC.

Alan J. Schmidt

Alan J. Schmidt
Project Hydrogeologist

Roger C. Cooley

Roger C. Cooley, P.E.
Project Manager

AJS:pjs:RCC
[adf 53-3]



REFERENCES

Warzyn, 1985. Fibrous Landspreading Evaluation, Beloit Corporation.
Warzyn Job No. 11926.

AJS:pjs:RCC
[adf 53-3]



TABLE 1

Summary of Information
From Private Water Supply Well
Construction Reports

<u>Address</u>	<u>Date Drilled</u>	<u>Screened Interval</u>	<u>Geology</u>	
409 Dingman Drive	--	58 to 60 ft	0-2 ft 2-44 ft 44-60 ft	topsoil sand & gravel sand
1300 Watts Ave.	1972	61 to 63 ft	0-63 ft	sand
Prairie Road (Ezra Trull)	1981	45 to 48 ft	0-8 ft 8-48 ft	black dirt sand & gravel
Blackhawk Blvd. (Rockton Township)	1977	80 to 82 ft	0-70 ft 70-82 ft	sand & gravel sand
1310 Blackhawk Blvd.	1980	60 ft	0-5 ft 5-25 ft 25-35 ft 35-60 ft	topsoil clay & sand sand sand & gravel
1200 Watts Avenue	1978	63 to 65 ft	0-3 ft 3-18 ft 18-50 ft 35-60 ft	topsoil sand & gravel clay & gravel gravel & sand
Blackhawk Blvd. (Rockton Area Health Center)	1978	240 to 280 ft (open hole)	0-2 ft 2-40 ft 40-80 ft 80-90 ft 90-110 ft 110-220 ft 220-240 ft 240-280 ft	topsoil sand & gravel clay sandy gravel & clay clay & gravel clay clay & gravel sandstone
Beloit Iron Works (Rockton Plant)	1959	161 to 186 ft	0-5 ft 5-86 ft 86-95 ft 95-106 ft 106-125 ft 125-128 ft 128-137 ft 137-148 ft 148-155 ft 155-185 ft 185-200 ft 200-235 ft 235 ft	black soil sand, gravel & boulders yellow & brown clay sand & gravel with clay brown clay sand brown clay silty sand clay sand & gravel clay clay with sand limestone

TABLE 2
SUMMARY OF VOLATILE ORGANIC COMPOUNDS
DETECTED IN SAMPLES FROM BELOIT CORPORATION
MONITORING WELLS

<u>Well No.</u>	<u>2-4-84(1)</u>	<u>3-2-84(1)</u>	<u>5-17-84(2)</u>	<u>5-14-85(1)</u>	<u>5-5-86(1)</u>
W-1					
Tetrachloroethylene	15(3)	<5	BDL	<5	<5
Trichloroethylene	<5	<5	89	<5	<5
1,1,1-Trichloroethane	19	18	47	<5	5.3
1,1-Dichloroethane	18	17	10	<5	7.9
Methylene Chloride	371	<10	BDL	<10	<10
2					
Tetrachloroethylene	<5	<10	BDL	<5	<5
Trichloroethylene	<5	<5	BDL	<5	<5
1,1,1-Trichloroethane	<5	<5	BDL	<5	<5
1,1-Dichloroethane	<5	<5	BDL	<5	<10
Methylene Chloride	142	<10	BDL	<10	<10
W-3					
Tetrachloroethylene	18	10	BDL	11	<5
Trichloroethylene	142	101	BDL	6	135
1,1,1-Trichloroethane	435	512	47	56	60
1,1-Dichloroethane	678	7.1	BDL	<5	<5
Methylene Chloride	58	<10	BDL	<10	<10
1,1-Dichloroethylene	BDL	BDL	BDL	<5	<5 (Trace)
W-5					
Tetrachloroethylene			BDL		
Trichloroethylene			35		
1, 1, 1-Trichloroethane			340		
1, 1-Dichloroethane			BDL		
Methylene Chloride			BDL		

(1) Analyzed by Northland Environmental Laboratory, South Beloit, Wisconsin

(2) Analyzed by CompuChem Research Triangle Park N.C.

(3) All concentrations reported in ug/l.

[adf-53-4]

TAE... 3
SUMMARY OF VOLATILE ORGANIC COMPOUNDS
DETECTED IN PRIVATE WATER SUPPLY WELLS
WATTS AVE. NEIGHBORHOOD

Address	5-28-82 (1)	12-8-82 (2)	6-8-83 (2)	1-24-84 (3)	5-8-84 (3)	9-18-84 (3)	IEPA Pre-Enforcement Conference Data (3)
908 Blackhawk							
Tetrachloroethylene					1		
Trichlorethylene							
Trans 1,2 Dichloroethylene							
1,1 Dichloroethylene							
Tetrachloroethane							
1,1,1 Trichloroethane					5		
1,2 Dichloroethane							
1,1 Dichloroethane							
Ethylbenzene							
Chloroform							
Methylene Chloride							
905 Watts Ave.							
Tetrachloroethylene				3	1		2
Trichlorethylene							
Trans 1,2 Dichloroethylene							
1,1 Dichloroethylene							
Tetrachloroethane							
1,1,1 Trichloroethane			4	2	1	2	1
1,2 Dichloroethane							
1,1 Dichloroethane			3				
Ethylbenzene							
Chloroform							
Methylene Chloride				1			
909 Watts Ave.							
Tetrachloroethylene							
Trichlorethylene							
Trans 1,2 Dichloroethylene					1	1	
1,1 Dichloroethylene						trace	
Tetrachloroethane							
1,1,1 Trichloroethane					5	3	1
1,2 Dichloroethane							
1,1 Dichloroethane						17	
Ethylbenzene							
Chloroform							1
Methylene Chloride							

Address	5-28-82 (1)	12-8-82 (2)	6-8-83 (2)	1-24-84 (3)	5-8-84 (3)	9-18-84 (3)	IEPA Pre-Enforcement Conference Data (3)
<hr/>							
910 Watts Ave.							
Tetrachloroethylene					1	51	45
Trichlorethylene			2	1		3	2
Trans 1,2 Dichloroethylene							
1,1 Dichloroethylene	45			33	trace	177	7
Tetrachloroethane							
1,1,1 Trichloroethane	945/482	120	220	105	142	105	120
1,2 Dichloroethane							
1,1 Dichloroethane		5	6	15	12	19	
Ethylbenzene							
Chloroform							
Methylene Chloride			1				
913 Watts Ave.							
Tetrachloroethylene							
Trichlorethylene		2					
Trans 1,2 Dichloroethylene							
1,1 Dichloroethylene							
Tetrachloroethane							
1,1,1 Trichloroethane	95/100						
1,2 Dichloroethane							
1,1 Dichloroethane							
Ethylbenzene							
Chloroform							
Methylene Chloride							
914 Watts Ave.							
Tetrachloroethylene							
Trichlorethylene		2					
Trans 1,2 Dichloroethylene						1	
1,1 Dichloroethylene							
Tetrachloroethane				24	72	48	
1,1,1 Trichloroethane		31	32				
1,2 Dichloroethane				19	22	20	
1,1 Dichloroethane							
Ethylbenzene				2	2	6	60
Chloroform							
Methylene Chloride							2

Address	5-28-82 (1)	12-8-82 (2)	6-8-83 (2)	1-24-84 (3)	5-8-84 (3)	9-18-84 (3)	IEPA Pre-Enforcement Conference Data (3)
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918 Watts Ave.

Tetrachloroethylene				trace			30
Trichloroethylene				trace			
Trans 1,2 Dichloroethylene							
1,1 Dichloroethylene							
Tetrachloroethane					86	52	
1,1,1 Trichloroethane							
1,2 Dichloroethane		197	370	175	47	50	9
1,1 Dichloroethane							
Ethylbenzene			4	16	4	17	
Chloroform							
Methylene Chloride							

1004 Watts Ave.

Tetrachloroethylene						trace	
Trichloroethylene				1			
Trans 1,2 Dichloroethylene							
1,1 Dichloroethylene							
Tetrachloroethane					23	21	
1,1,1 Trichloroethane			2	4			4
1,2 Dichloroethane					3	2	
1,1 Dichloroethane				11			
Ethylbenzene							
Chloroform							
Methylene Chloride							

(1) Analysis performed by Sanitary District Laboratory

(2) Analysis performed by IEPA Laboratory

(3) Analysis performed by IDPH Laboratory

[adf-53-4]

TABLE 4

Summary Of Available Data On
Soterion/United Recovery Sampling And Analysis

<u>Date</u>	<u>Sample Descriptions</u>	<u>Analyses Available</u>
9-14-81	IEPA - Septic Tank	yes - PCB's, Indicator Parameters, Metals Phenols, Cyanide
9-28-81	IEPA - Waste Material and Oil	yes - Metals
1-13-82	IEPA - Waste material and Oil	yes - EP Toxicity Metals
4-7-82	IEPA - Oil, Incoming Material, Outgoing Material	yes - Metals
6-22-82	IEPA - Wheel, Soterion Wells	yes - Chromium and VOCs

APPENDIX A

Soil Boring Logs and Well Construction Information
Wells W-1 - W-11

WARZYN**ENGINEERING INC****LOG OF TEST BORING**

Project Beloit Corporation

Location Rockton, Illinois

 Boring No. 1
 Surface Elevation 746.9
 Job No. C 11440/8000145
 Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9638, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery		Moisture		N	Depth		q _s	W	LL	PL	D
No.	Type	↓	↓								
						Black TOPSOIL					
					5	Very Fine to Fine to Medium SAND and GRAVEL					
					10						
					15						
					20						
					25						
					30						
					35						
					40						
						End Boring at 37'					
						Install well at 37'					
WATER LEVEL OBSERVATIONS						GENERAL NOTES					
While Drilling						10/27/83 10/27/83					
Upon Completion of Drilling						Start Complete SJW 919'					
Time After Drilling						Crew Chief Rig DC(4") 0-10'					
Depth to Water						Drilling Method FA 0-9'; WB 0-37';					
Depth to Cave In						ED 9-37'					

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800006

BORING NO. 1

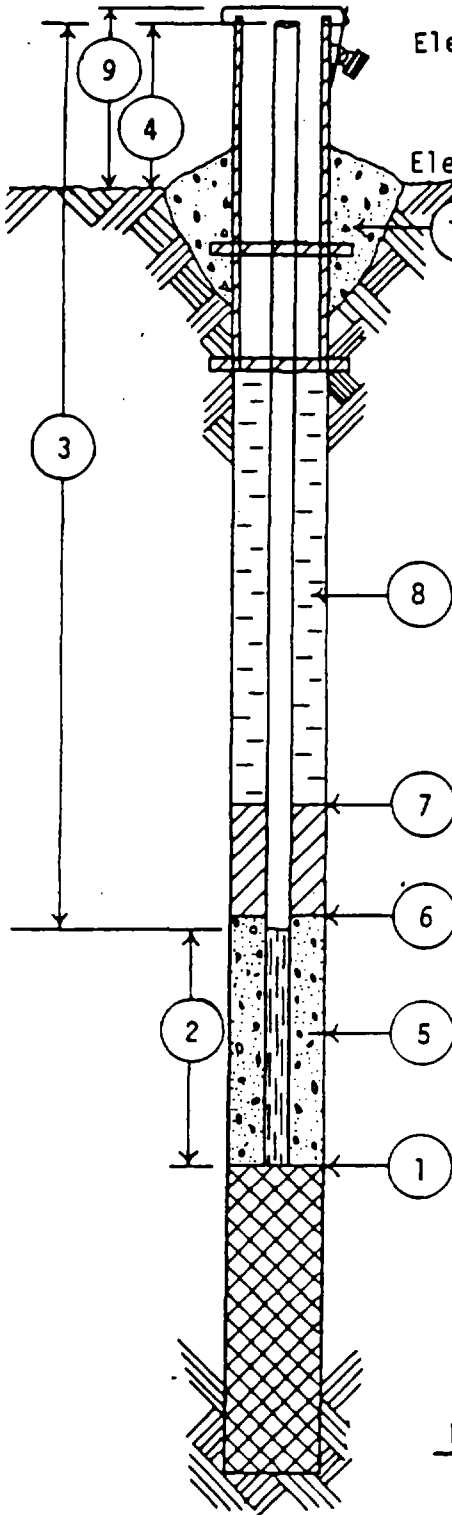
DATE 10/27/83

749.58 Steel
Elev. 749.53 PVC CHIEF SJW

LOCATION Beloit Corporation; Rockton, Illinois

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

Elev. 746.9



- 1 DEPTH TO BOTTOM OF BOREHOLE 37 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE 10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 29.5 FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND 2.5 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL 4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL 0 FEET
- 8 TYPE OF BACKFILL Spoils
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2.5'
LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**

Project Beloit Corporation
 Location Rockton, Illinois

Boring No. 2
 Surface Elevation 752.9
 Job No. C 11440/800145
 Sheet of

1409 EMIL STREET • P.O. BOX 9536, MADISON, WIS. 53715 • TEL. (608) 257-4648

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture				G _s	W	LL	PL	D
No.	Type	↓	↓	N	Depth						
						Black TOPSOIL					
					5	Very Fine to Fine to Medium SAND and GRAVEL, Trace to Little Silt					
					10						
					15						
					20						
					25						
					30						
					35						
					40						
							End Boring at 37'				
							Install well at 37'				
WATER LEVEL OBSERVATIONS						GENERAL NOTES					
While Drilling						10/26/84 10/26/84					
Upon Completion of Drilling						Start Complete					
Time After Drilling						Crew Chief SJJW. Rig 919					
Depth to Water						Drilling Method FA 0-9'					
Depth to Cave In						DC(4") 0-9'; WB 9-37'					
						ED 9-37'					

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800006

BORING NO. 2

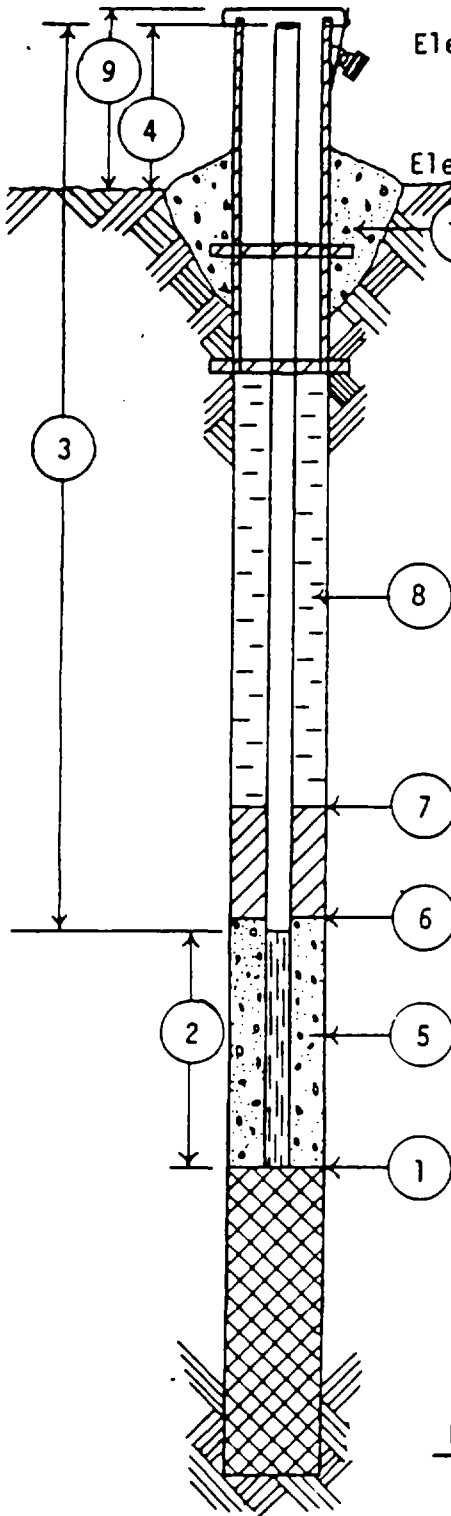
DATE 10/26/83

Elev. 755.12 Steel
754.94 PVC CHIEF SJW

LOCATION Beloit Corporation; Rockton, Illinois

Elev. 752.9

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
37 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN,
OR SLOTTED PIPE 10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 29
FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
2 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL
POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
0 FEET
- 8 TYPE OF BACKFILL Spoils
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2'
- LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**

Project Beloit Corporation

Location Rockton, Illinois

Boring No. 3

Surface Elevation 743.8

Job No. C 11440/300145

Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9536, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE

Recovery

Moisture

No. Type ↓ ↓ N Depth

**VISUAL CLASSIFICATION
and Remarks****SOIL PROPERTIES**q_w W LL PL D

Black TOPSOIL

Very Fine to Fine to Medium
SAND with GRAVEL, Trace to
Little Silt

SAND

End Boring at 37'

Installed 37' well with 10' screen
and 2 1/2' up.

WATER LEVEL OBSERVATIONS

While Drilling

Upon Completion of Drilling

Time After Drilling

Depth to Water

Depth to Cave In

GENERAL NOTES

Start 10/26/83 Complete 10/26/83

Crew Chief SUW Rig 919

Drilling Method FA 0-10'

DC(4") 0-10'; WB 10-37'

ED 10-37'

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800006

BORING NO. 3

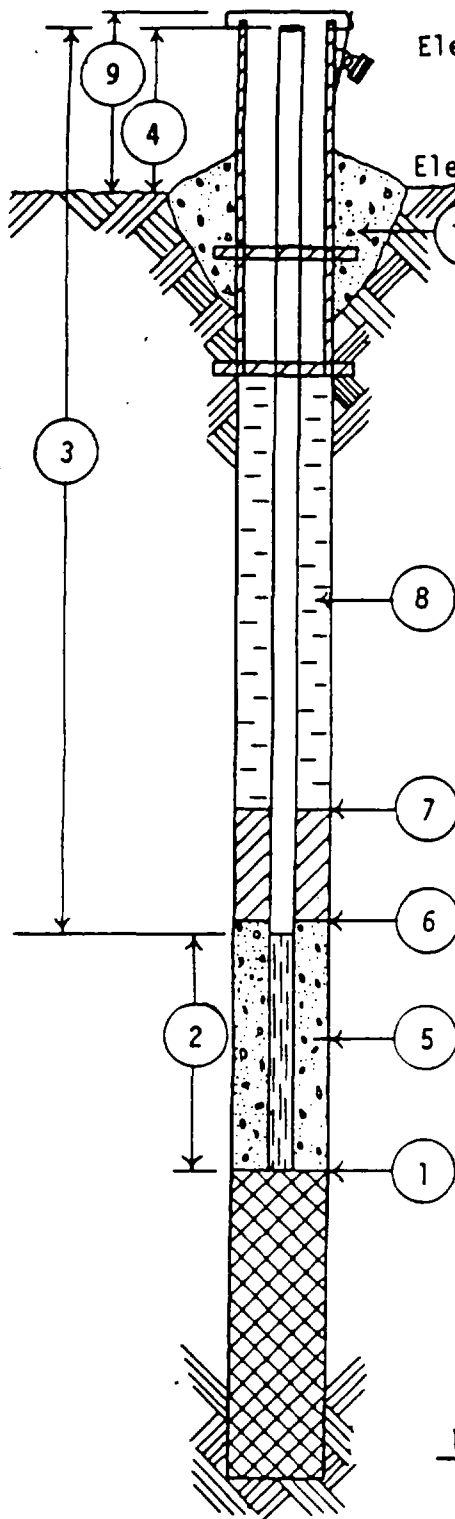
DATE 10/26/83

Elev. 746.48 Steel
746.04 PVC CHIEF SJW

LOCATION

Elev. 743.8

ALL depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
37 FEET
- 2 LENGTH OF WELL POINT WELL SCREEN,
OR SLOTTED PIPE 10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 29.5
FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
2.5 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL
POINT OR SLOTTED PIPE Sand (Spoil)
- 6 DEPTH OF LOWER OR BOTTOM SEAL
4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
0 FEET
- 8 TYPE OF BACKFILL Spoils
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2.5'
LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**Project Beloit CorporationLocation Rockton, IllinoisBoring No. W-4Surface Elevation 752.7Job No. C 11440/800145Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9638, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE**Recovery****Moisture**

No. Type ↓ ↓ M Depth

**VISUAL CLASSIFICATION
and Remarks****SOIL PROPERTIES**

* W LL PL D

Dark Brown Sandy SILT

Brown Fine to Medium SAND,
Some Gravel, Little to
Some Silt (SM)Brown Silty Fine to Medium
GRAVEL and SAND (GM)Brown Silty Very Fine to
Fine SAND (SM)

Install Well at 38'

End Boring at 40'

WATER LEVEL OBSERVATIONS**GENERAL NOTES**

While Drilling _____

Upon Completion of Drilling _____

Time After Drilling 1 1/2 hour _____Depth to Water 30' _____

Depth to Cave In _____

Start 4/23/84 Complete 4/23/84Crew Chief SW/MG Rig 9100

Drilling Method _____

DC (4") 0-34'WB w/CW 0-40'SPT 0-40'

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

BORING NO. W-4

DATE 4/24/84

CHIEF SJW

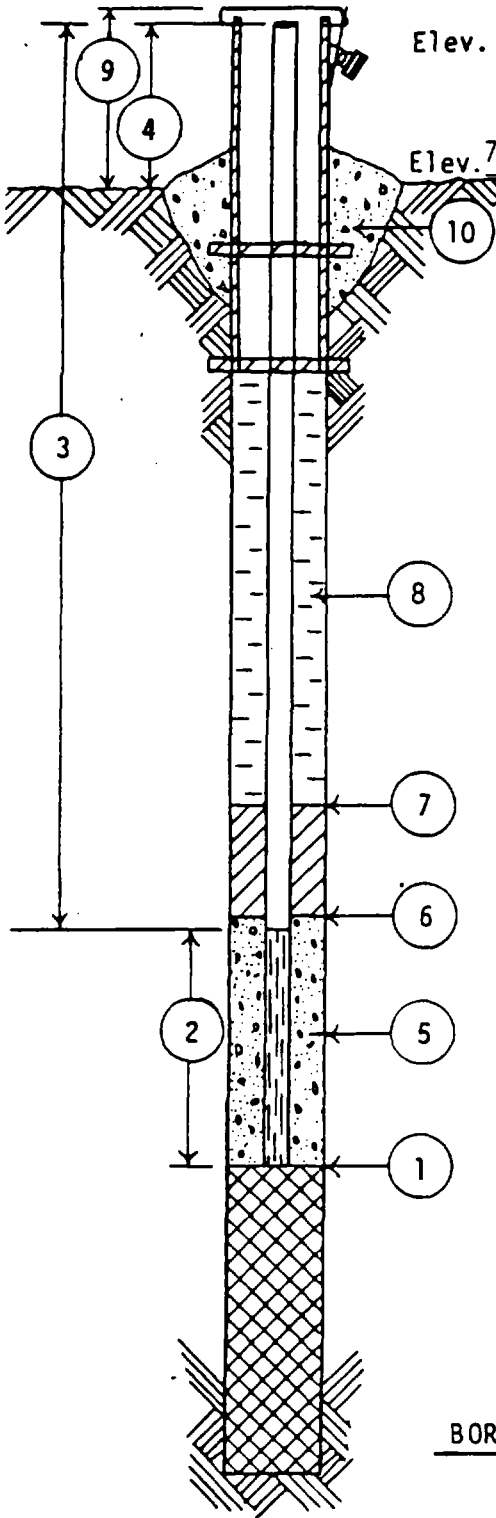
754.87 Steel
Elev. 754.52 PVC

LOCATION

Beloit Corporation; Blackhawk Facility

Elev. 752.7

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
38 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE 10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 29.8 Flush Joint FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
1.8 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
0 FEET
- 8 TYPE OF BACKFILL Sand
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2'
LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**

Project Beloit Corporation

Location Rockton, Illinois

Boring No. W-5 (P-3A)

Surface Elevation 743.7

Job No. C-11440/800145

Sheet 1 of 2

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery		Moisture		N	Depth		q _v	W	LL	PL	D
No.	Type	↓	↓								
						Dark Brown Sandy SILT					
1	SS	X	M	42	5	Brown Silty Medium to Coarse GRAVEL and SAND (GM)					
2	SS	X	M	100	10						
3	SS	X	M	60	15						
4	SS	NR		100	20	Brown Fine to Medium SAND, Trace to Little Silt, Trace to Little Gravel (SP-SM)					
5	SS	X	W	45	25						
6	SS	X		100	30						
7	SS	X	M	63	35	Orange Color at 34'					
						Brown Sandy SILT, Trace Clay (ML)					
8	SS	X	W	13	40	Gray Finely Laminated SILT and Fine SAND, Occasional Layers Organic Silt					
9	SS	X	W	54	45	Brown Very Fine to Fine SAND, Little Silt (SM)					

(Continued)

(Continued)

LOG OF TEST BORING

Project Beloit Corporation
Location Rockton, Illinois

W-5
(P-3A)
Boring No. _____
Surface Elevation 743.7
Job No. C 11440/800145
Sheet 2 of 2

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery		Moisture		N	Depth		q	W	LL	PL	D
No.	Type	↓	↓								
10	SS	NR		65	50	Brown Very Fine to Fine SAND, Little Silt (SM)					
11	SS	X		60/9"	55		Coarse Sand at 55'				
					60	End Boring at 58'					
					65	Install Piezometer at 52.5'					
					70						
					75						
					80						
					85						

WATER LEVEL OBSERVATIONS						GENERAL NOTES	
While Drilling _____						Start <u>4/24/84</u> Complete <u>4/24/84</u>	
Upon Completion of Drilling _____						Crew Chief <u>SJW/MG</u> 9100	
Time After Drilling _____						Drilling Method <u>DC 0-34'</u>	
Depth to Water _____						WB w/CW <u>0-58'</u>	
Depth to Cave In _____						SPT <u>0-55'</u>	

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

BORING NO. W-5(P-3A)

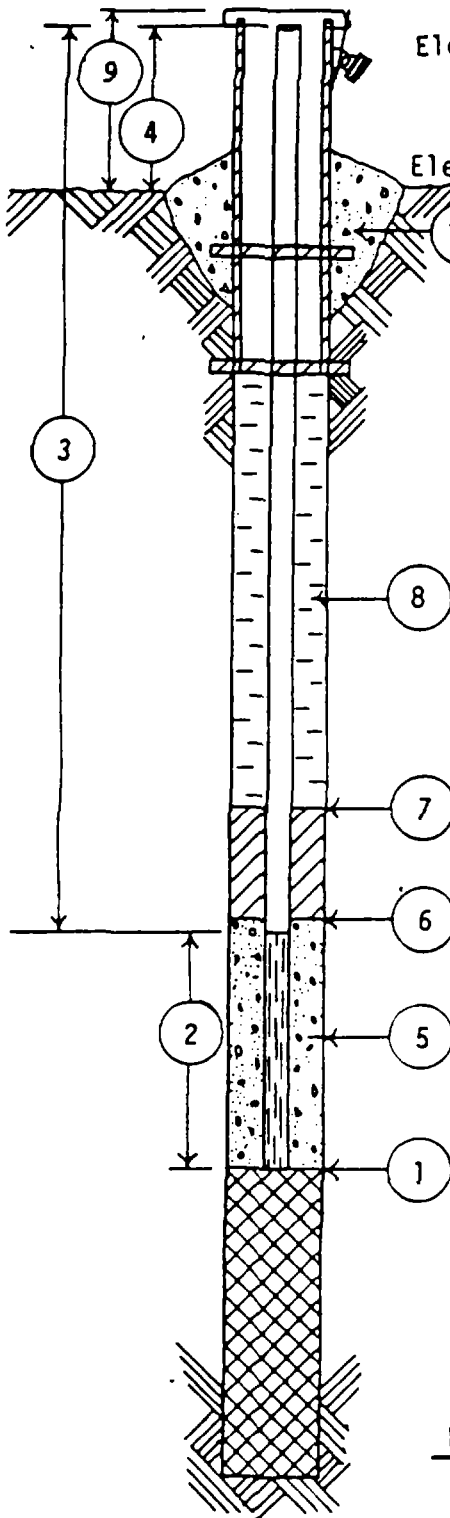
DATE 4/25/84

Elev. 746.54 Steel
746.38 PVC CHIEF SJW

LOCATION Beloit Corporation; Blackhawk Facility

Elev. 743.7

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
52.5 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN,
OR SLOTTED PIPE 5 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 50.2 Flush Joint
FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
2.7 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL
POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
45 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
40 FEET
- 8 TYPE OF BACKFILL Sand
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2.8'
LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**Project Beloit CorporationLocation Rockton, IllinoisBoring No. W-6(W-5)Surface Elevation 745.2Job No. C-11440/800145Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9636, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES									
Recovery			Moisture				No.	Type	↓	N	Depth	W	LL	PL	D	
No.	Type	↓	↓	N	Depth											
1	SS	X	M	11	5	Dark Brown Sandy SILT (ML)										
2	SS	X	M	38	10		Brown Silty Fine to Coarse GRAVEL and SAND (GM)									
3	SS	X	M	32	15											
4	SS	X	W	22	20	Brown Silty Fine to Medium SAND, Little Gravel (SM)										
5	SS	X	M	100	25		Harder Drilling at 25'									
6	SS	X	M	73	30											
7	SS	X	M	76	35	Gray Very Silty Fine to Medium SAND (SM) to Gray Sandy Silt (ML) Install Well at 38.4'										
8	SS	X	M	100	40		End Boring at 40'									
WATER LEVEL OBSERVATIONS						GENERAL NOTES										
While Drilling _____						4/20/84 4/20/84										
Upon Completion of Drilling _____						Start _____ Complete _____										
Time After Drilling _____						Crew Chief _____ SW/MG Rig 9100										
Depth to Water _____						Drilling Method DC(4") 0-19'										
Depth to Cave In _____						WB w/CW 0-40'										
						SPT 0-40'										

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

BORING NO. W-6 (W-5)

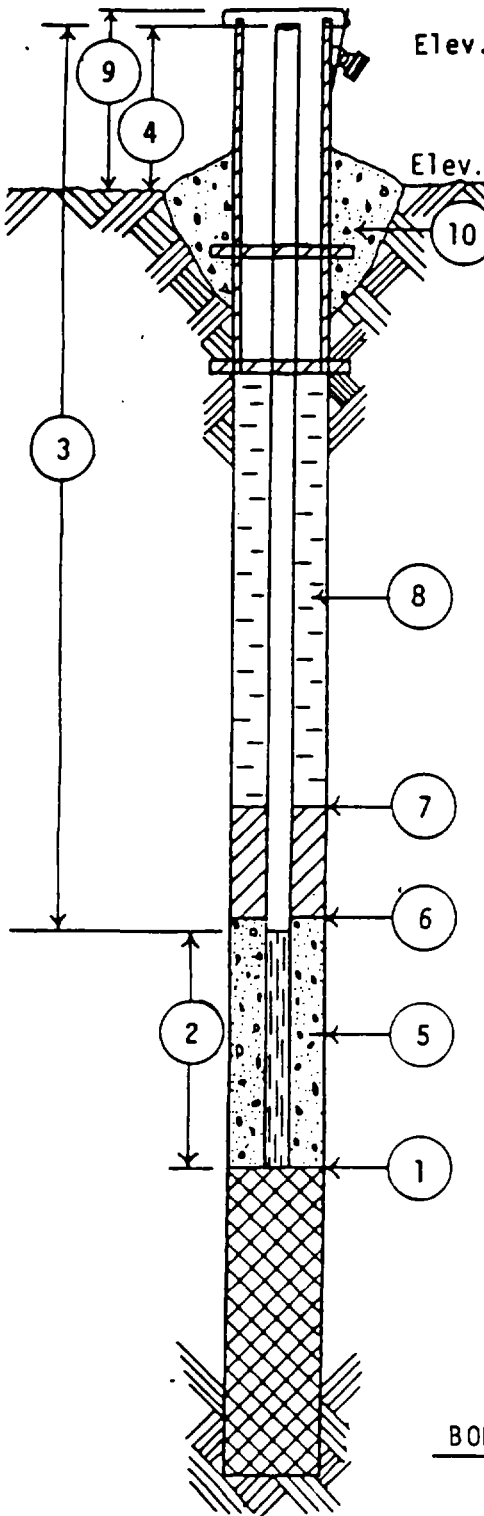
DATE 4/20/84

Elev. 747.66 Steel
747.61 PVC CHIEF SJW

LOCATION Beloit Corporation Blackhawk Facility

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

Elev. 745.2



- 1 DEPTH TO BOTTOM OF BOREHOLE
38.4 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE 10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 30.8 Flush Joint FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
2.4 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
0 FEET
- 8 TYPE OF BACKFILL Sand
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2.5'
LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**Project Beloit CorporationLocation Rockton, Illinois
 Boring No. W-7
 Surface Elevation 749.1
 Job No. C-11440/800145
 Sheet 1 of 1

1408 EMIL STREET • P.O. BOX 9536, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture				P	W	LL	PL	D
No.	Type	↓	↓	M	Depth						
						Dark Brown Silty Sandy TOPSOIL					
1	SS	X	M	52	5						
2	SS	X	M	100	10	Brown Silty Medium GRAVEL and Fine to Coarse SAND (GM)					
3	SS	X	M	90	15						
4	SS	X	W	25	20	Light Brown Silty Very Fine to Fine SAND, Trace Gravel (SM)					
5	SS	X	M-W	76	25	Pink to Brown Very Silty Very Fine to Medium SAND, Trace to Little Gravel, Occasional Very Thin Layers with Clay (SM)					
6	SS	X	W	60 78"	30	Brown Silty Fine to Medium SAND, Little Gravel (SM)					
7	SS	X	W	60 78"	35	Brown Silty Very Fine to Medium SAND, Trace Gravel (SM)					
					40	Brown Silty Very Fine SAND (SM) to Brown Sandy Silt (ML)					
						End Boring at 40'					
WATER LEVEL OBSERVATIONS						GENERAL NOTES					
While Drilling _____						Start <u>4/17/84</u> Complete <u>4/17/84</u>					
Upon Completion of Drilling _____						Crew Chief <u>SW/MG</u> Rig <u>9100</u>					
Time After Drilling _____						Drilling Method <u>DC(4") 0-23</u>					
Depth to Water _____						WB w/CW 0-40'					
Depth to Cave In _____						SPT 0-40'					

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

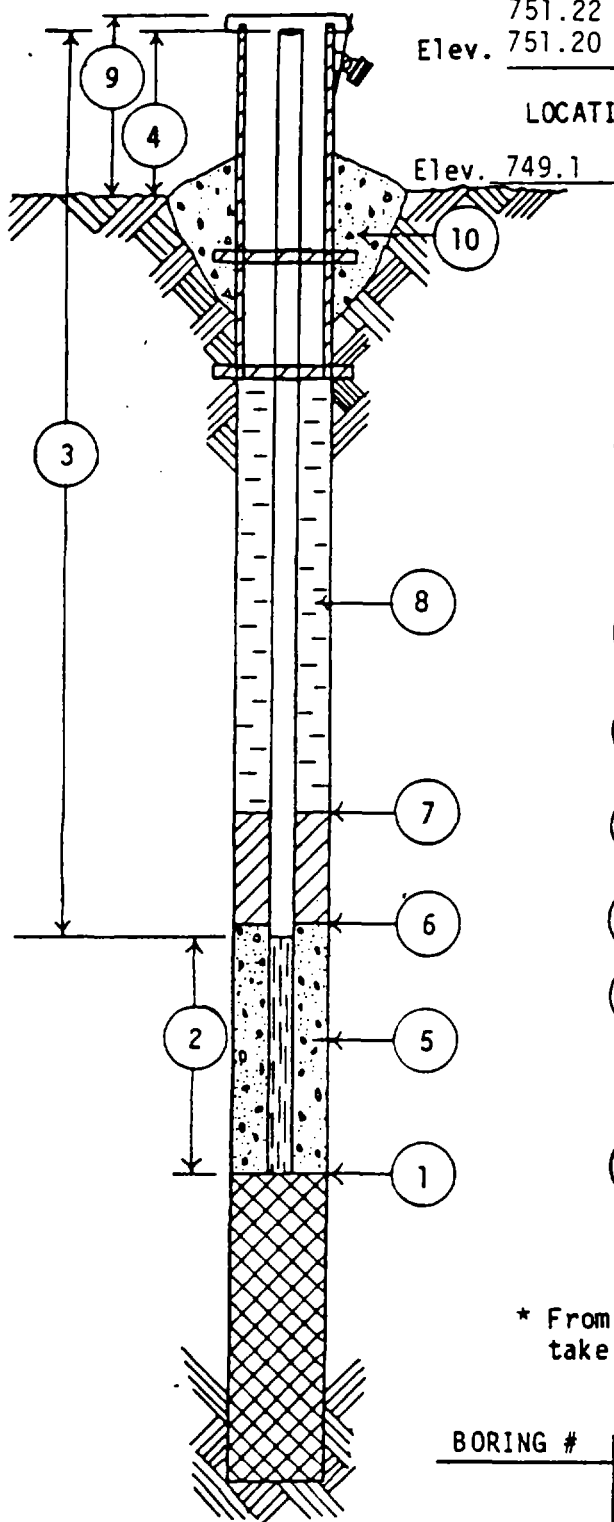
BORING NO. W-7

DATE 4/18/84

Elev. 751.22 Steel
Elev. 751.20 PVC CHIEF SJW

LOCATION Beloit Corporation; Blackhawk Facility

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
33.4 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE
10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 25.5 Flush Joint
FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
2.1 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
0 FEET
- 8 TYPE OF BACKFILL Sand
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2.3'
- LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**Project Beloit CorporationLocation Rockton, Illinois

W-8(W-6)

Boring No. 772.3Surface Elevation 772.3Job No. C11400/800145Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9636, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE

Recovery

Moisture

No. Type ↓ ↓ N Depth

**VISUAL CLASSIFICATION
and Remarks****SOIL PROPERTIES**

* W LL PL D

For description of subsurface
conditions refer to Boring
Log W-11

Install Well at 54'

End Boring at 55'

WATER LEVEL OBSERVATIONS

While Drilling _____
 Upon Completion of Drilling _____
 Time After Drilling 24 hours
 Depth to Water 36' _____
 Depth to Cave In _____

GENERAL NOTES

Start 4/10/84 Complete 4/10/84
 Crew Chief SJW Rig 9100
 Drilling Method DC(4") 0-40'
 WB w/ CW 0-40'
 ED 0-40'

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

BORING NO. W-8(W-6)

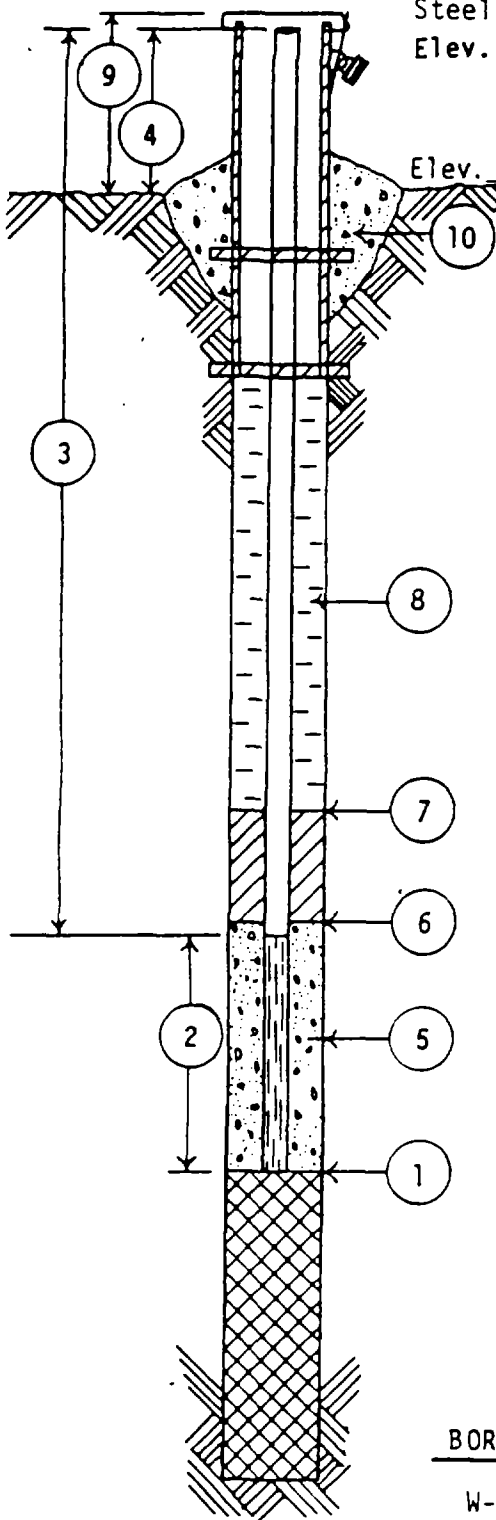
DATE 5/10/84

Steel
Elev. 774.49

CHIEF MG/SL

LOCATION Beloit Corporation/ Rockton, Illinois

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
54 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE 10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 46 FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND 2 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Flint Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL 4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL 0 FEET
- 8 TYPE OF BACKFILL Sand & Gravel Spoils
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2'
- LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS
W-6	5/10/84	1/2 hour	42.5'	



LOG OF TEST BORING

Project Beloit Corporation.....

Location Rockton, Illinois

Boring No. W-9 (W-8)

Surface Elevation 752.7

Job No. C...11440/800145....

Sheet1..... of1.....

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

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WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

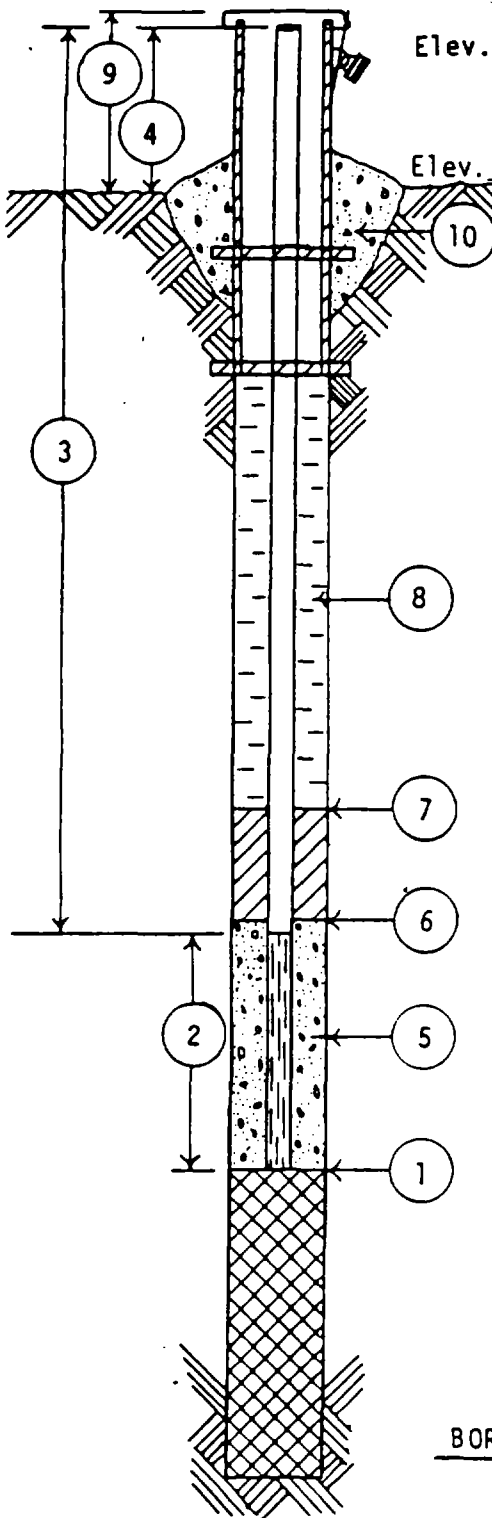
BORING NO. W-9 (W-8)

DATE 4/19/84

Elev. 754.67 Steel
Elev. 754.62 PVC CHIEF SJW

LOCATION Beloit Corporation; Blackhawk Facility

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
34.5 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE 10 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 26.4 Flush Joint FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
1.9 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
4 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
0 FEET
- 8 TYPE OF BACKFILL Sand
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2'
LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**

Project Beloit Corporation

Location Rackton, Illinois

W-10 (P-8A)

Boring No.

Surface Elevation 752.6

Job No. C 11440/800145

Sheet 1 of 2

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery		Moisture		N	Depth		q _v	W	LL	PL	D
No.	Type	↓	↓								
						Dark Brown Silty SAND (SM)					
1	SS	X	M	2	5	Brown Fine to Medium SAND, Some Silt (SM)					
2	SS	X	M	16	10	Light Brown Silty Very Fine SAND (SM)					
3	SS	X	M	100	15	Brown Silty Fine to Coarse GRAVEL and SAND (GM)					
4	SS	X	M	61	20						
5	SS	X		47	25	Light Brown Silty Very Fine to Fine SAND, Trace Gravel (SM)					
6	SS	X	M	90	30						
7	SS	X	M	43	35						
8	SS	X	M	100	40						
9	SS	X	M	58	45						

(Continued)

(Continued)



LOG OF TEST BORING

Project Beloit Corporation
 Location Rockton, Illinois

Boring No. W-10 (P-8A)
 Surface Elevation 752.6
 Job No. C11440/800145
 Sheet 2 of 2

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture				Mo	W	LL	PL	D
No.	Type	↓	↓	N	Depth						
						Light Brown Silty Very Fine to Fine SAND, Trace Gravel (SM)					
10	SS	X	M	88	50						
						Brown Fine to Medium SAND, Trace to Little Silt, Trace Gravel (SM-SP)					
11	SS	X	W	100	55						
					60	End Boring at 60'					
					65						
					70						
					75						
					80						
					85						

WATER LEVEL OBSERVATIONS

While Drilling
 Upon Completion of Drilling
 Time After Drilling
 Depth to Water
 Depth to Cave In

GENERAL NOTES

Start 4/18/84 Complete 4/18/84
 Crew Chief SW/MC Sig 9100
 Drilling Method DC (0-29')
 WB w/CW 0-60'
 SPT 0-55'

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

BORING NO. W-10 (P-8A)

DATE 4/19/84

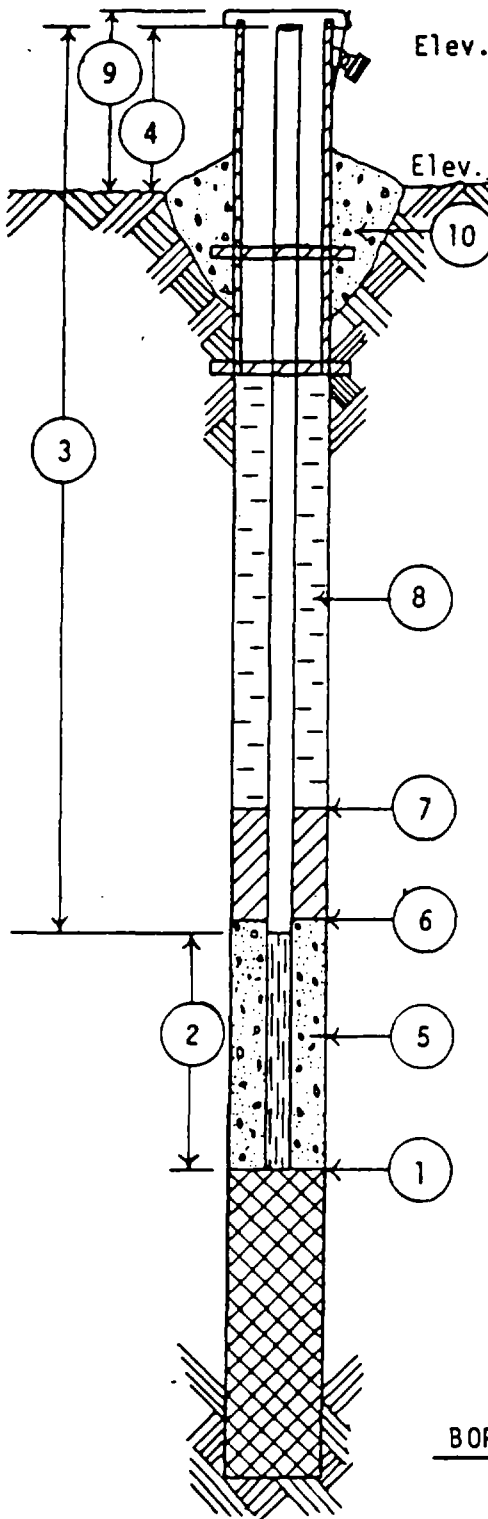
Elev. 754.72 Steel
754.61 PVC CHIEF

SJW

LOCATION Beloit Corporation: Blackhawk Facility

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.

Elev. 752.60



- 1 DEPTH TO BOTTOM OF BOREHOLE
57.7 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE 5 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 54.7 Flush Joint FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
2 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
51 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
48 FEET
- 8 TYPE OF BACKFILL Sand
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2'
LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

WARZYN**ENGINEERING INC****LOG OF TEST BORING**

Project Beloit Corporation
 Location Rockton, Illinois

Boring No. W-11(P-6A)
 Surface Elevation 771.9
 Job No. C 11440/800145
 Sheet 1 of 2

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
Recovery		Moisture		N	Depth		q _v	W	LL	PL	D	
No.	Type	↓	↓									
						Brown Silty Fine to Medium SAND (SM)						
	SS	X	M	7	5							
2	SS	X	M	16	10	Brown Fine to Coarse SAND, Little Silt, Trace to Little Gravel (SM)						
3	SS	X	M	60	15	Some Gravel at 15'						
4	SS	X	M	29	20							
5	SS	NR		37	25	Brown Fine to Coarse Silty GRAVEL and SAND (GM)						
6	SS	X	W	60	30							
7	SS	NR	W	37	35							
8	SS	X	W	60	40	Brown Fine to Medium SAND, Little to Some Silt, Trace Gravel (SM)						
9	SS	X	W	100	45							

(Continued)

(Continued)



LOG OF TEST BORING

Project Beloit Corporation

Location Rockton, Illinois

Boring No. W-11 (P-6A)

Surface Elevation

Job No. C 11440/800145.....

Sheet2..... of2.....

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848.

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture				q _s	W	LL	PL	D
No.	Type	↓	↓	N	Depth						
						*					
10	SS	X	M	100	50	Brown Silty Very Fine to Medium SAND, Trace Gravel (SM)					
11	SS	X	M	100	55						
12	SS	X	M	100	60						
						Install Piezometer at 62'					
						End Boring at 62'					
					65						
						*Brown Fine to Medium SAND, Little to Some Silt, Trace Gravel (SM)					
					70						
					75						
					80						
					85						

WATER LEVEL OBSERVATIONS

While Drilling _____

Upon Completion of Drilling _____

Time After Drilling _____

Depth to Water _____

Depth to Cave In _____

GENERAL NOTES

Start ^{4/10/84} Complete ^{4/10/84}

Crew Chief SW/MG Rig 9100

Drilling Method DC (4") 0-49'

WB w/CW 0-62'

SPT 0-62

WELL DETAIL INFORMATION SHEET

JOB NO. C 11440/800145

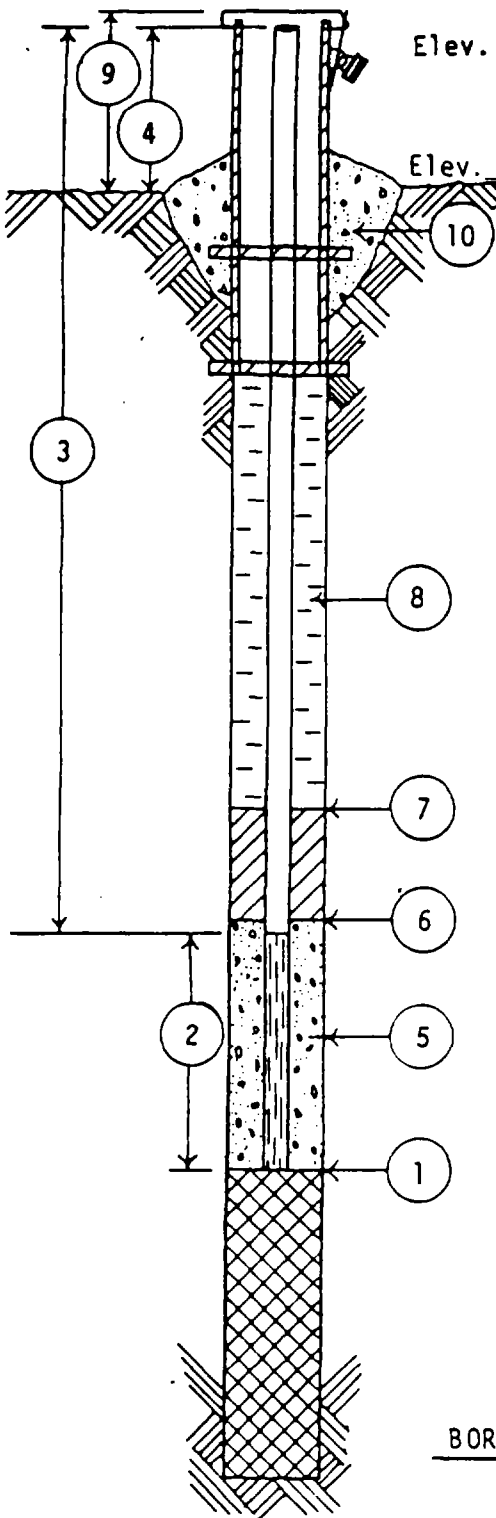
BORING NO. W-11 (P-6A)

DATE 4/17/84

Elev. 774.55 Steel
774.42 PVC CHIEF SJW

LOCATION Beloit Corporation; Blackhawk Facility

Elev. 771.9 All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- 1 DEPTH TO BOTTOM OF BOREHOLE
62 FEET
- 2 LENGTH OF WELL POINT, WELL SCREEN, OR SLOTTED PIPE 5 FEET
- 3 TOTAL LENGTH OF SOLID PIPE 59.6 Flush Joint
FEET @ 2 IN. DIAMETER
- 4 HEIGHT OF WELL CASING ABOVE GROUND
2.6 FEET
- 5 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE Sand
- 6 DEPTH OF LOWER OR BOTTOM SEAL
55 FEET
- 7 DEPTH OF UPPER OR TOP SEAL
50 FEET
- 8 TYPE OF BACKFILL Sand
- 9 PROTECTIVE CASING YES NO
HEIGHT ABOVE GROUND 2.4'
- LOCKING CAP YES NO
- 10 CONCRETE CAP YES NO

WATER LEVEL CHECKS

* From top of casing, if protective casing higher take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

APPENDIX B

Soil Boring Logs and Well Construction Information
Wells G-101 - G-107 and P-1



Illinois Environmental Protection Agency

BORING NO B-1		WELL NO B 101		GROUNDLEVEL ELEV 723.7		PAGE 1		OF 1	
COUNTY Winneshago		SITE NO 20103502		DATE 5/15/84		FINISH 5/15/84		ABOVE PACKING cuttings	
SITE Rockton/Soterian		BORING LOCATION 1/4 mi S of intersection 75+Rd 2, W side of Roadway		START TIME 7:30 AM		FINISH TIME 11:30 AM		PACKING concrete w/ 5% granular bentonite	
Casing Equipment CME-55		Casing Size 3 1/4 in ID		Casing Type Hollow Stem Auger		Completion Depth 53.0'		Bedrock Depth —	
Well Casing 2" PVC Pipe w/ screw joints (teflon taped joints)		Type and Quantity (check aug screen)		Top of Casing Elevation 766.371		Screen slough		Personnel L. JME D. DMT H. KWB	
Screen Interval 15.0' of screened PVC : screened interval 52.3'-52.3'		Type and Quantity —		Sample No		Sampler Type		Sample Recovery %	
Elev		Description		Depth		Penetration (Strength)		N Value (Blow)	
00-2.4		Silt - brown to black, scattered sand, med. grained, very weathered, friable, sl. damp roots.		0					
		① 1.4-2.4 damp		1					
2.4-2.5		Sand - lt brown to pink, sl. damp fine to med grained, friable, small amount of Fe staining		2					
		① 2.4-2.45 Quartzite - rose in color, v. angular, small to med		3					
2.5-3.6		Sandy Gravel - lt. brown, sl. damp, friable, Gravel - rounded and angular Sand - sub-rounded, sub-ang.		4					
		① 2.9 sl moist, Fe stain		5		CS			
5.0-9.5		Gravelly Sand - brown, some what bedded. Gravel - rounded, various sizes Sand - moist, fine, med & large grains sub-angular - sub-rounded		10					
9.5-15.2		Sand & Gravel - brown		15					
		① 15.2 - 25.0 moist		20					
		① 25.0 - 45.0 very moist		25					
				30					
				35					
				40					
				45					
				50					
				53					
		End of Boring @ 53.0							
		55.1' of PVC							
		15' of screen							
		2.8' of stick up							

Augered from
5.0 - 53.0

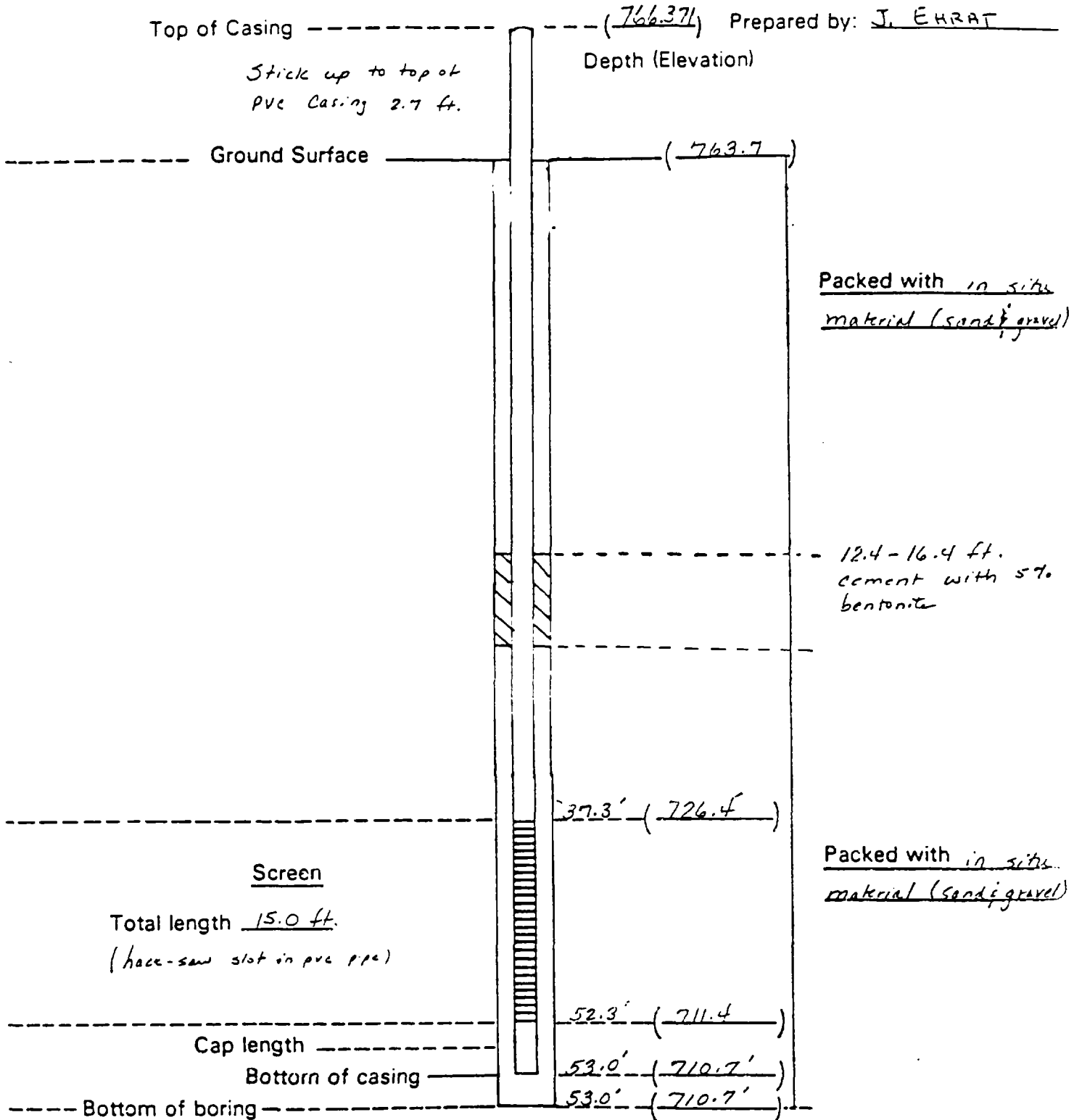
MONITOR WELL CONSTRUCTION

Location: ROCKTON STUDY

Site No.: _____

Well No.: G 101

Prepared by: J. EHRT



Pipe: Type and quantity 2 in. I.D. sched 40 pvc w/ screw joints (teflon taped)

15.0 ft. hack saw screen. Total 55.1' of PVC



Illinois Environmental Protection Agency

BORING NO.		WELL NO.		GROUNDLEVEL ELEV.		PAGE		OF	
B-2		A-102		766.9		1		1	
COUNTY		SITE NO.		DATE		ANNUAL FILL MATERIAL			
Winnebago		20103502		5/15/84		cuttings			
BORING LOCATION		TYPE		FINISH		ABOVE PACKING			
Rocky / Saterian		3/4 in ID		400 PM		concrete w/ 5% granular bentonite			
DRILLING EQUIPMENT		TYPE		FINISH		SCREEN			
CMF-55		Hollow Stem Auger		400 PM		slough			
COMPLETION DEPTH		BEDROCK DEPTH		TOP OF CASING ELEV.		PERSONNEL			
49.0				769.621		L. JME D. DMT H. KWB			
WELL CASING		TYPE AND QUANTITY		SAMPLES				REMARKS	
2" PVC Pipe w/ screw joints (teflon taped joints)		(hack saw screen)		Sample No.					
SCREEN INTERVAL		TYPE AND QUANTITY		Sample Type					
15.0' of screened PVC : screened interval 34.1' - 49.1'				Sample Recovery ft					
ELEV		DESCRIPTION		Penetration (Strength)					
766.9				N Value (Blows)					
		0.0 - 2.2 Silt - brown to black, damp, friable, sand grains found scattered through sample, roots							
		2.2 - 3.6 Sand - reddish brown, med. grained, damp, v uniform							
		5.0 - 6.0 Clayey Sand - brown, v. moist.							
		6.0 - 12.5 Sand - brown, v uniform med grained, v moist							
		12.5 - 49.0 Sand & Gravel - brown sub angular - sub-rounded moist.							
		39.5' ▼							
717.9		End of Boring 49.0'							
		51.8' of PVC							
		15.0' of screen							
		2.7' stick up							

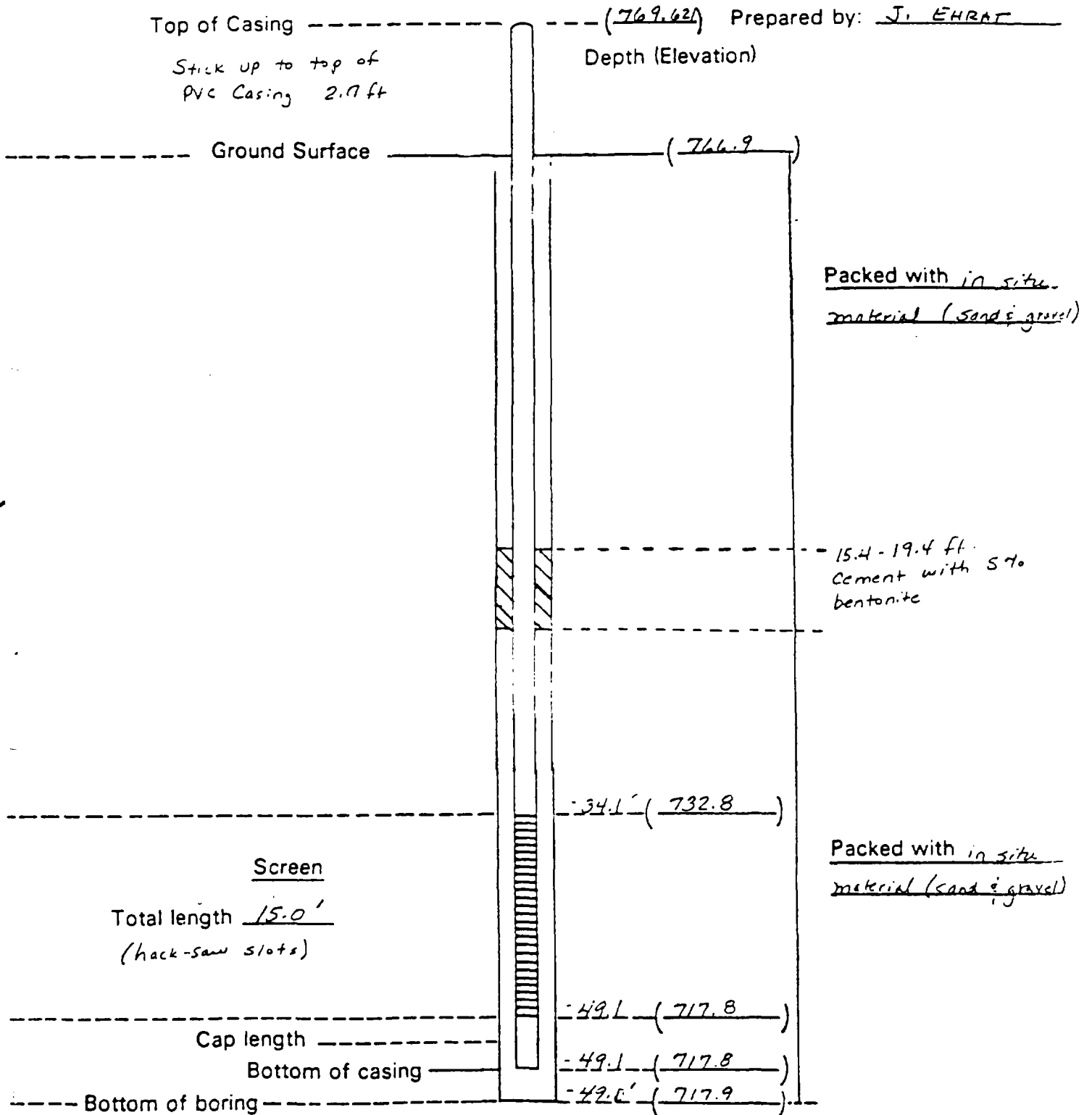
MONITOR WELL CONSTRUCTION

Location: ROCKTON STUDY

Site No.: _____

Well No.: G 102

Prepared by: J. EHRAF



Pipe: Type and quantity 2 in. I.D. pvc pipe with screw joints (telfon tape)

15.0 ft. hack saw slots, total 54.8 ft. pvc casing.



Illinois Environmental Protection Agency

BORING NO. B-2		WELL NO. G103.5		GROUNDLEVEL ELEV. 746.4		PAGE 1 OF 1	
COUNTY Winnebago		SITE NO.		DATE 5-14-86 5-15-86		ABOVE PACKING 0-10.0ft. Cement with 5% bentonite	
SITING Rockton Area Groundwater Study		START TIME 5-14-86		FINISH TIME 5-15-86		SCREEN in situ material	
BORING LOCATION 910 Watts near RR tracks		DRILLING EQUIPMENT CME 55 3 1/4" I.D. Hollow stem augers / knock-out plate		COMPLETION DEPTH 25.75 ft.		SCREEN INTERVAL 20.31 to 25.28 ft. depth .01 slot size	
WELL CASING type 316 stainless steel sched. 5		TYPE AND QUANTITY environmental threads sched. 40.		SAMPLES		PERSONNEL	
ELEV. 746.4		DESCRIPTION		DEPTH		REMARKS	
		Description from cuttings					
		0-2.3ft. Black silt (topsoil)		0			
		2.3-5.0ft. Brown med. to fine sand		5			
		5.0-10.0ft. Brown sand and gravel ranging in size from sand to 4", poorly sorted		10			
		10.0-18.0ft. Brown gravelly Sand coarseness decreases with depth		15			
		15.0-25.0ft. Light brown silty Sand with some gravel up to 1" in size, trace clay		20			
				25			
				30			
		Boring Completed at 25.8 ft.					

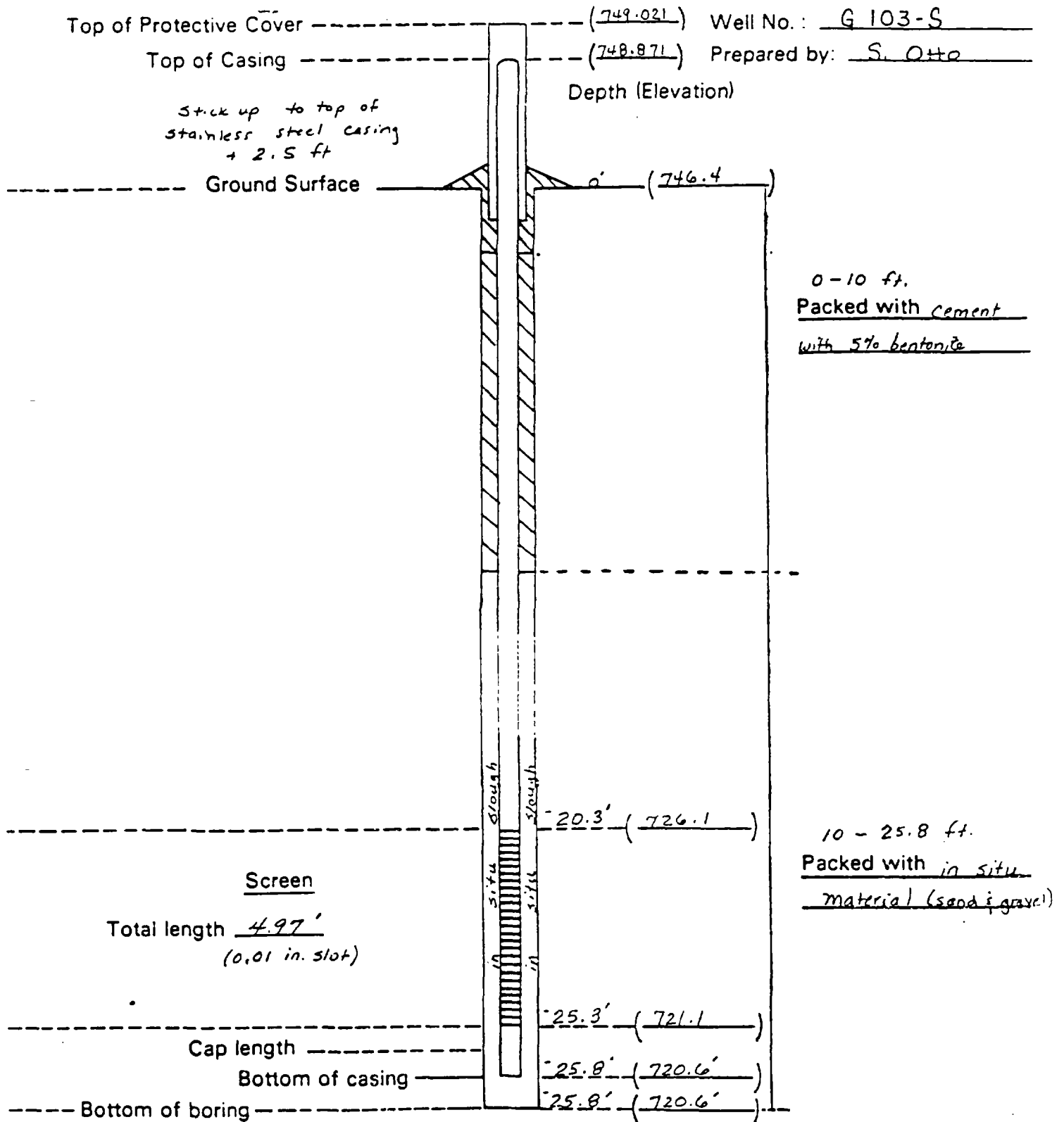
MONITOR WELL CONSTRUCTION

Location: ROCKTON STUDY

Site No.: _____

Well No.: G 103-S

Prepared by: S. Otto



Pipe: Type and quantity Type 316 stainless steel sched 5, environmental threads sched. 40;
0.01 in slot size; 2 in. I.D.; 2-10' riser, 1-5' riser, 1-5' screen; 1 plug
cut off 2.55', tot. length casing 28.25'; 1-4" I.D. x 5' protective cover



Illinois Environmental Protection Agency

BORING NO. B-6		WELL NO. G103D		GROUNDLEVEL ELEV. 746.1		PAGE 1 OF 1				
COUNTY Winnebago		SITE NO.		DATE		ANNULUS FILL MATERIAL				
SITE Rockton Area Groundwater Study				START 6-26-86 FINISH 6-26-86		ABOVE PACKING See monitor well				
BORING LOCATION 912 Watts near RR tracks				TIME		PACKING construction				
DRILLING EQUIPMENT CME 55 3 1/4" ID hollow stem auger with knockout plate				START		FINISH				
COMPLETION DEPTH 49 ft		SEDIMENT DEPTH		TOP OF CASING Elev. 747.891		SCREEN				
WELL CASING TYPE AND QUANTITY Type 316 stainless steel sched. 5				SAMPLES						
Environmental threads sched. 40										
SCREEN INTERVAL 43.59 to 48.57 ft. depth TYPE AND QUANTITY 0.01 slot				PERSONNEL						
				G. S. Otto						
				D. Tolon						
				H. J. Morse						
ELEV. 746.1	DESCRIPTION			DEPTH in feet	Sample No	Sampler Type	Sample Recovery %	Penetration (lb/inch)	N Value (blows)	REMARKS
	Description from cuttings			0						
	0-3 ft. Black sandy silt (v. fine sand) top soil			5						
	3-5 ft. Dark brown silty Sand v. fine grain			10						
	5-10 ft. Gravel ranging from 1/2" to 3/4" in size, well rounded.			15						
	10-18 ft. Light brown gravelly Sand, coarse to v. coarse, gravel up to 1/2" in size, well rounded, poorly sorted.			20						
	18-20 ft. Light brown Sand with some gravel up to 1/4" in size, med. grain sand.			25						
	20-22 ft. Light brown sandy Gravel up to 2" in size, well rounded			30						
	22-35 ft. Light brown Sand med. to coarse grain some gravel, some clay			35						
	35-43 ft. Light pinkish brown sandy Clay with some gravel			40						
	43-49 ft. Light yellow brown sandy Clay very wet			45						
697.1	Boring Complete at 49 ft.			50						
	Water level after 24 hrs., 22.56 ft. from ground surface (723.571 G.W. Elev.)									

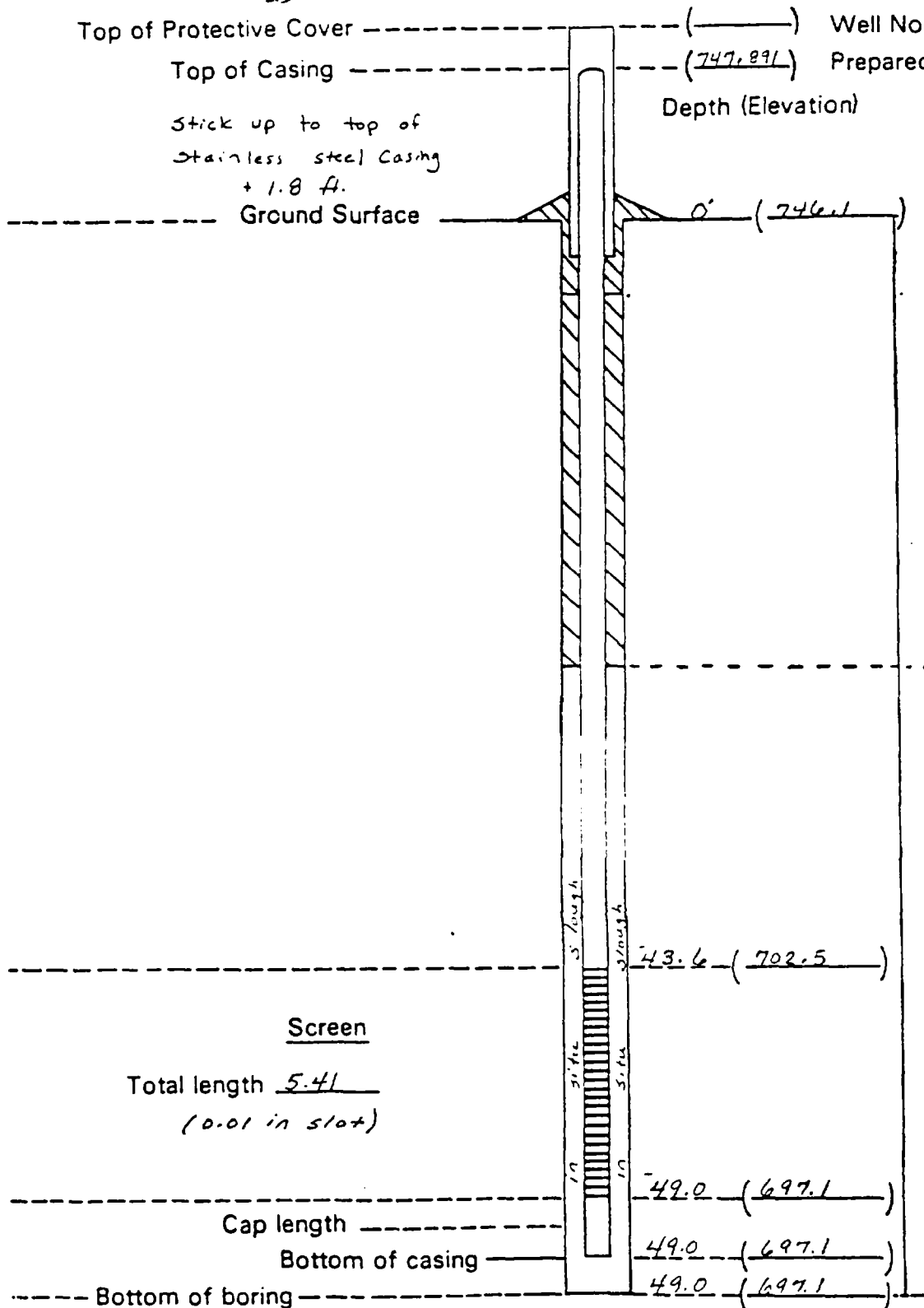
MONITOR WELL CONSTRUCTION

Location: ROCKTON STUDY

Site No.: _____

Well No.: G 103-D

Prepared by: S. O'H



Pipe: Type and quantity Type 316 stainless steel sched. 5, environmental threads sched. 0.01 in slot size; 2 in. I.D., Total length of casing 50.79 ft.



Illinois Environmental Protection Agency

BORING NO. B-3		WELL NO. G104		GROUNDLEVEL ELEV. 741.7		PAGE 1 OF 1			
COUNTY Winnebago		SITE NO.		DATE		ANNULUS FILL MATERIAL			
SITE Rockton Area Groundwater Study				START 5-21-86	FINISH 5-21-86	ABOVE PACKING 0-10 ft. cement with 5% bentonite			
BORING LOCATION Trull Property		SIZE		TIME		PACKING			
DRILLING EQUIPMENT CME 55 3 1/4" ID hollow stem auger with knockout plug		TYPE		START	FINISH				
COMPLETION DEPTH 25		BEDROCK DEPTH		TOP OF CASING Elev. 744.56		SCREEN insitu material			
WELL CASING Type 316 stainless steel sched. 5				SAMPLES			PERSONNEL		
Environmental threads sched. 40				Sample No	Sampler Type	Sample Recovery Ft	Penetrometer (Strength)	N Value (Blow)	G. S. Otto
SCREEN INTERVAL 19.55' to 24.56' 0.01 slot									D. Tolan
ELEV. 741.2				REMARKS					
DESCRIPTION				DEPTH					
Description from cuttings				0					
0-1 ft. Black silt (top soil)				5					
1-4 ft. Gravel with some sand up to 3" in size, well rounded, poorly sorted.				10					
4-10 ft. increasing amounts of sand, fewer pebbles, ~30%, up to 1" size				15					
10-20 ft. Gravelly sand ~30% gravel grain decreasing with depth				20					
20-25 ft. Sand med. to coarse grain some silt, wet.				25					
Boring Completed at 25 ft.				30					
Water level after 3 hrs., 16.72 ft. from ground surface (725.01 G.W. Elev.)									

MONITOR WELL CONSTRUCTION

Location: ROCKTON STUDY

Site No.: _____

Well No.: G 104

Prepared by: J. O'Ho

Top of Protective Cover -----

Top of Casing -----

Depth (Elevation)

Stick up to top of
stainless steel casing
2.8 ft.

Ground Surface -----

0' (741.7)

0 - 10 ft
Packed with cement
with 5% bentonite

Screen

Total length 5.0 ft.
(0.01 in slot)

19.6' (722.1)

10 - 25.0 ft.
Packed with in situ
material (sand & gravel)

Cap length -----

Bottom of casing -----

24.6 (717.1)

25.0 (716.7)

Bottom of boring -----

25.0 (716.7)

Pipe: Type and quantity _____



Illinois Environmental Protection Agency

BORING NO 8-7		WELL NO G107		GROUNDLEVEL ELEV		PAGE 1		OF 1	
COUNTY Winnebago		SITE NO		DATE 7-16-86		FINISH 7-16-86		ANNUAL FILL MATERIAL see monitor well	
DRILLING LOCATION 2226 Blackhawk Blvd		TYPE CME 55		SIZE 3 1/4" I.D. hollow stem auger with knockout plug		TIME START		FINISH PACKING Construction	
COMPLETION DEPTH 49 ft		BEDROCK DEPTH		TOP OF CASING Elev. 771.241		SCREEN		PERSONNEL G. S. O + to / J. Moss D. K. Bosie H. T. Murphy	
WELL CASING Type 316 stainless steel sched. 5		TYPE AND QUANTITY Environmental threads sched. 40		SAMPLES		REMARKS			
SCREEN INTERVAL 43.55' to 48.53'		TYPE AND QUANTITY stainless steel screen 0.01 slot		Sample No		Sampler Type		Sample Recovery ft	
ELEV		DESCRIPTION		DEPTH in feet		Penetration (lb/inch)		N Value (blows)	
		Description from cuttings		0					
		0-3 ft. Dark brown changing to a reddish brown at 1 ft Sand med. grain.		5					
		3-8 ft. Sandy Gravel, gravel up to 4" in size, rounded to well rounded, poorly sorted.		10					
		8-12 ft. Light brown gravelly Sand, gravel up to 1" in size, well rounded.		15					
		12-13 ft. Sandy Gravel, gravel up to 3" in size, well rounded, poorly sorted.		20					
		13-23 ft. Light brown gravelly Sand, med. to v. coarse grain, approx. 30% gravel up to 1" in size.		25					
		23-31 ft. Light brown Sand with some gravel coarse to v. coarse grain, poorly sorted, gravel is well rounded and up to 1/2" in size		30					
		31-49 ft. Light brown sandy Gravel up to 2" in size, poorly sorted, well rounded.		35					
				40					
				45				Driller Notes: Harder to drill at 30-31 ft.	
				50				H ₂ O at 45.0 ft.	
		Boring Completed at 49 ft.							
		Water level after 24 hrs. 38.72 ft from ground surface (730.621 G.U. elev.)							

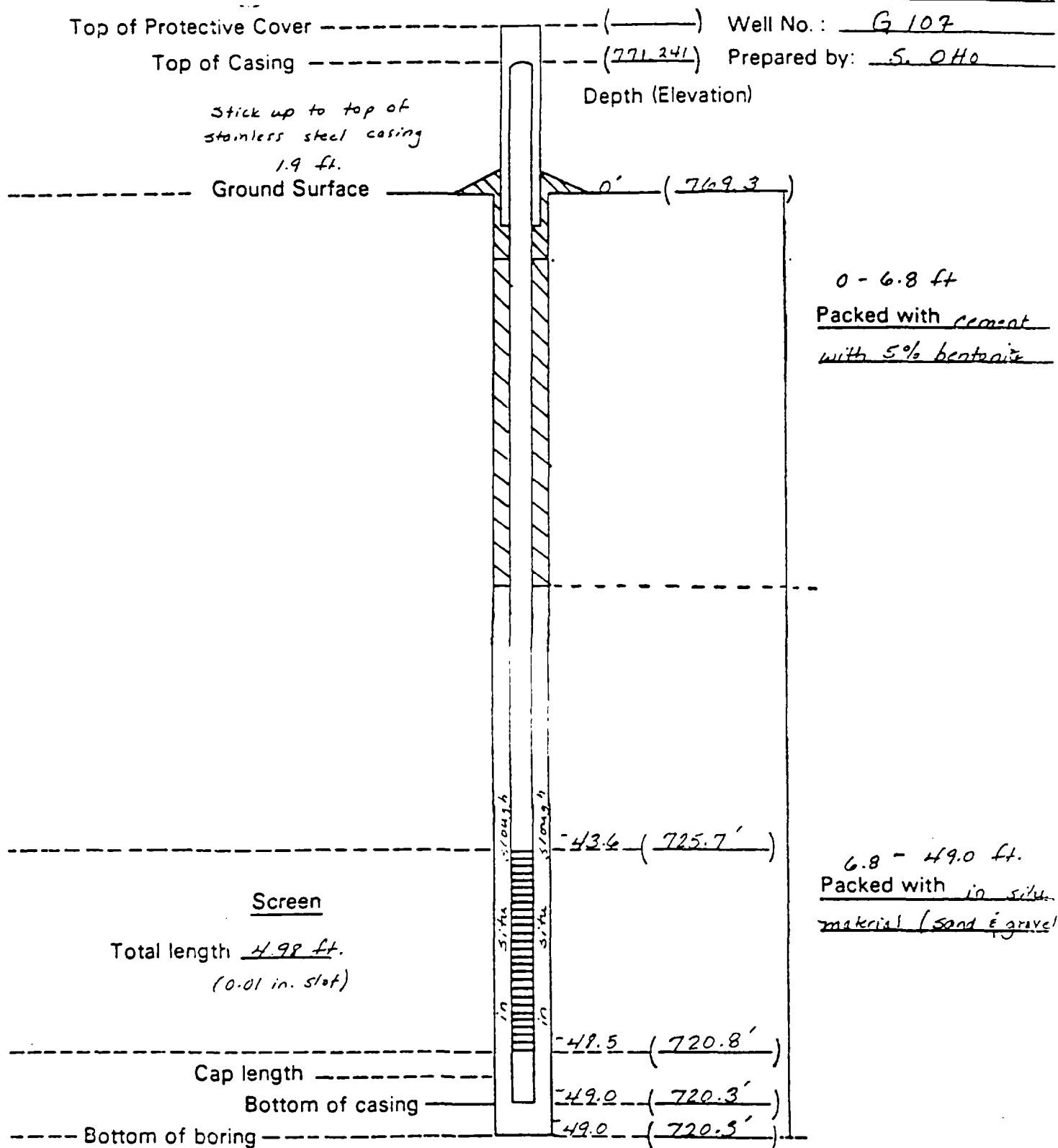
MONITOR WELL CONSTRUCTION

Location: ROCKTON STUDY

Site No.: _____

Well No.: G 107

Prepared by: S. OHO



Pipe: Type and quantity Type 316 stainless steel casing sched 5; environmental
threads sched 40, screen size 0.01 in. slot; 5-10' risers, 1-5' screen, 1 plug All
2 in. I.D., 1- 4" i.d. x 5' protective cover, 4.98' cut off; total length casing 52.9 ft.



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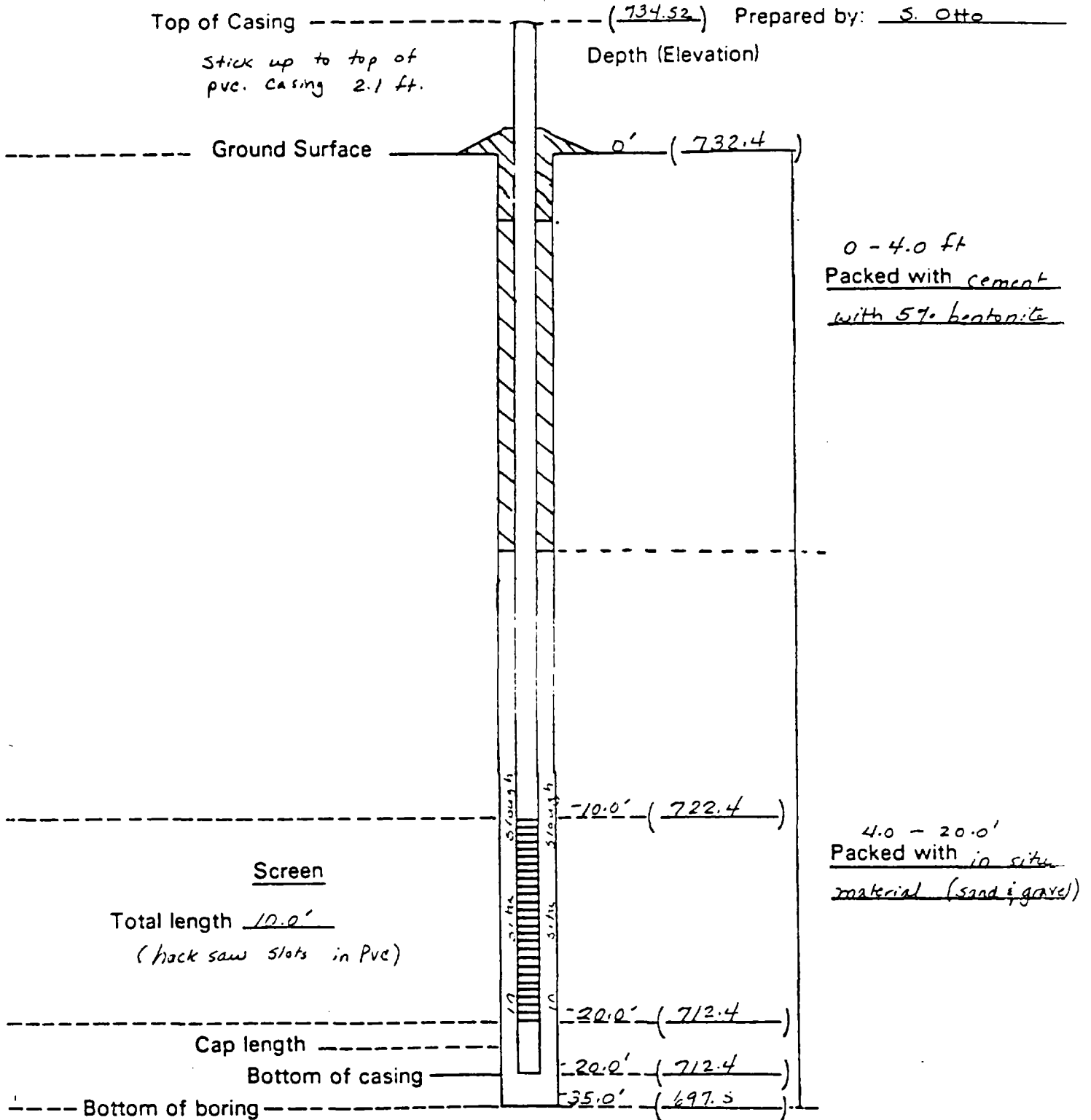
MONITOR WELL CONSTRUCTION

Location: ROCKTON STUDY

Site No.: _____

Well No.: P-1 (Piezometer)

Prepared by: S. Otto



Pipe: Type and quantity 2 in. I.D., sched. 40, pvc pipe - with hack-saw

slots bottom 10.0 ft. ; total casing 22.05 ft, glued at joints,

APPENDIX C
Groundwater Elevations

Table____: Groundwater Levels of the Shallow Glacial Aquifer North of Rockton, Illinois

<u>Data Point</u>	<u>4/29/86</u>	<u>5/12/86</u>	<u>6/3/86</u>	<u>6/17/86</u>	<u>7/16/86</u>	
Beloit W-1	729.90	729.60	729.17	728.88	729.14	
Beloit W-2	727.75	727.41	727.36	726.97	726.42	
Beloit W-3	725.49	725.18	724.84	724.46	724.03	
Beloit W-4	724.45	724.36	724.06	723.82	723.25	
Beloit W-5	725.39	725.08	724.69	724.35	724.08	
Beloit W-6	726.89	726.44	726.10	725.70	725.69	
Beloit W-7	730.89	730.60	730.55	730.17	729.93	
Beloit W-8	731.37	731.27	731.17	731.07	730.78	
Beloit W-9	731.34	730.94	730.76	730.32	729.78	
Beloit W-10	731.30	730.94	730.76	730.34	729.76	
Beloit W-11	731.69	731.58	731.47	731.37	731.09	
EPA P-1						
EPA P-1			724.48	724.10	724.05	
EPA G101	725.55	725.40	725.12	725.96	724.43	
EPA G102	730.89	730.76	730.62	730.47	730.16	
EPA G103			727.51	727.02	726.33	
EPA G103D						
EPA G104			724.71	724.34	724.07	
EPA G107					730.62(7/17)	
Rock River						
Trulls			725.28	725.10	725.70	
N.of Beloit Corp		726.09	725.68	725.68	726.30	

APPENDIX D

Private Water Supply
Well Construction Reports

1/16 Copy -
Ill. Dep. of Public Health
1/16 Copy - Well Contractor
1/16 Copy - Well Owner

INSTRUC 45 TO DRILL

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE
DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST
JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER
SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well

- a. Dug ☐ Bored ☐ Hole Diam. in. Depth ft.
Curb material Buried Slab: Yes ☐ No ☐
b. Driven ☐ Drive Pipe Diam. in. Depth ft.
c. Drilled ☒ Finished in Drift ☐ In Rock ☒
Tubular ☐ Gravel Packed ☐
d. Grout: ☐

(KIND)	FROM (FT.)	TO (FT.)
DRILL MUD	0	240

2. Distance to Nearest:

Building 40 Ft. Seepage Tile Field 100
Cess Pool ☐ Sewer (non Cast iron) ☐
Privy ☐ Sewer (Cast iron) ☐
Septic Tank 50 Barnyard ☐
Leaching Pit ☐ Manure Pile ☐

3. Well furnishes water for human consumption? Yes ☒ No ☐

4. Date well completed 6-23-78

5. Permanent Pump Installed? Yes ☒ Date Aug 20-78 No ☐

Manufacturer Pet-Tek Type 545 Location Well

Capacity 50 gpm. Depth of Setting 80 Ft.

6. Well Top Sealed? Yes ☒ No ☐ Type cap

7. Pitless Adapter Installed? Yes ☒ No ☐

Manufacturer Whitewater Model Number 54662

How attached to casing? threaded into coupling

8. Well Disinfected? Yes ☒ No ☐

9. Pump and Equipment Disinfected? Yes ☒ No ☐

10. Pressure Tank Size 400 gal. Type 2 X-Trols

Location utility room

11. Water Sample Submitted? Yes ☒ No ☐

REMARKS:

Winn Co permit #

2269

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Rockton Health Center Well No.

Address Blackhawk Riv. Rockton, IL

Driller Ed Greenfield License No. 92-582

11. Permit No. 75194 Date June 7-78

12. Water from sandstone 13. County Winn

at depth 240 to 280 ft. Sec. 13.18

14. Screen: Diam. in. Twp. 46N

Length: ft. Slot Rge. 1E

Elev.

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
6	BLK PE. 18.97	0	240

SHOW LOCATION IN SECTION PLAT
180°N 100°E SW/4
SE NE NE (Rockton Area)
(Winn. Health Center)

16. Size Hole below casing: 6 in.

17. Static level 65 ft. below casing top which is 1 ft.

above ground level. Pumping level 68 ft. when pumping at 40

gpm for 8 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
soil	2	2
sand + gravel	38	40
clay	40	80
sandy gravel + clay	10	90
clay + gravel	20	110
clay	110	220
clay + gravel	20	240
sandstone	40	280

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Ed Greenfield DATE Nov. 11-79

White Copy -
Ill. Dept. of Public Health
Yellow Copy - Well Contractor
Blue Copy - Well Owner

INSTRUCTIONS TO WELLERS

FILL IN ALL PERTINENT INFORMATION REQUIRED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well

- a. Dug ☐ Bored ☐ Hole Diam. in. Depth ft.
Curb material Buried Slob: Yes ☐ No ☐
- b. Driven ☐ Drive Pipe Diam. in. Depth ft.
- c. Drilled ☒ Finished in Drift ☒ In Rock ☐
Tubular ☐ Gravel Packed ☐
- d. Grout: ☐

(KIND)	FROM (FT.)	TO (FT.)
Drill mud	0	63

2. Distance to Nearest:

Building 15 Ft. Seepage Tile Field 100
Cess Pool ☐ Sewer (non Cast iron) ☐
Privy ☐ Sewer (Cast iron) ☐
Septic Tank 50 Barnyard ☐
Leaching Pit ☐ Manure Pile ☐

3. Well furnishes water for human consumption? Yes ☒ No ☐

4. Date well completed 6-27-78

5. Permanent Pump Installed? Yes ☒ Date 6-28-78 No ☐

Manufacturer Red Jacket Type sub Location well
Capacity 40 gpm. Depth of Setting 40 Ft.

6. Well Top Sealed? Yes ☒ No ☐ Type well's cap

7. Pitless Adapter Installed? Yes ☒ No ☐

Manufacturer Wells Model Number WX4x1
How attached to casing? Bolt on

8. Well Disinfected? Yes ☒ No ☐

9. Pump and Equipment Disinfected? Yes ☒ No ☐

10. Pressure Tank Size 42 gal. Type WX 202
Location Basement

11. Water Sample Submitted? Yes ☒ No ☐

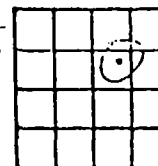
REMARKS:

Tested Win Co Health Dept

cc permit # 2718

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Glen Manson Well No. 1
Address 1700 Watts Ave Rockton
Driller Ed Greenfield License No. 92-592
11. Permit No. 75-881 Date 6-22-78
12. Water from sand 13. County Win
formation
at depth 63 to 65 ft. Sec. 13
14. Screen: Diam. 4 in. Twp. 4EN
Length: 2 ft. Slot 20 Rge. 1E
Elev.



15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
4	New BIE steel 11 lbs per ft	0	63
4	ss Johnson screen	63	65

SHOW LOCATION IN SECTION PLAT
at 1700, Watts Ave, 100' N, 100' E, SW 1/4, NE SW NE

16. Size Hole below casing: in.

17. Static level 23 ft. below casing top which is 1 ft. above ground level. Pumping level 30 ft. when pumping at 40 gpm for 4 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
Rk dirt	3	3
sand + gravel	15	18
clay + gravel	32	50
sand	15	65

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Ed Greenfield DATE 6-27-78

White Copy -
Ill. Dep. of Public Health
Yellow Copy - Well Contractor
Blue Copy - Well Owner

INSTRUCTIONS TO WELLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE
DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST
JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER
SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

GEOLOGICAL AND WATER SURVEYS WELL RECORD

1. Type of Well

- a. Dug ☐ Bored ☐ Hole Diam. in. Depth ft.
Curb material Buried Slab: Yes ☐ No ☐
b. Driven ☐ Drive Pipe Diam. in. Depth ft.
c. Drilled ☒ Finished in Drift ☒ In Rock ☐
Tubular ☐ Gravel Packed ☐
d. Grout:

(KIND)	FROM (FT.)	TO (FT.)

2. Distance to Nearest:

Building 30 Ft. Seepage Tile Field 100
Cess Pool ☐ Sewer (non Cast iron) ☐
Privy ☐ Sewer (Cast iron) ☐
Septic Tank 80 Barnyard ☐
Leaching Pit ☐ Manure Pile ☐

3. Well furnishes water for human consumption? Yes ☒ No ☐

4. Date well completed 9-11-80

5. Permanent Pump Installed? Yes ☒ Date 2-12-80 No ☐

Manufacturer STARITE Type SUBM Location WELL
Capacity 10 gpm. Depth of Setting 55 Ft.

6. Well Top Sealed? Yes ☒ No ☐ Type CAT

7. Pitless Adapter Installed? Yes ☒ No ☐

Manufacturer MARTINSON Model Number AP-5

How attached to casing? WELT

8. Well Disinfected? Yes ☒ No ☐

9. Pump and Equipment Disinfected? Yes ☒ No ☐

10. Pressure Tank Size 40 gal. Type XTROL

Location BARNSPORT

11. Water Sample Submitted? Yes ☐ No ☒

REMARKS:

10. Property owner LUTHER BISHOP Well No.

Address 1310 BLACK HAWK BLVD

Driller J. HICKLE License No. 102-189

11. Permit No. 96156 Date 9-16-80

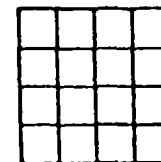
12. Water from DRIFT 13. County Willard

at depth 30 to 60 ft. Sec. 13.19

14. Screen: Diam. 5 in. Twp. 4H

Length: 2 ft. Slot 30 Rge. 1E

Elev.



15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
<u>5</u>	<u>14 LB T4C</u>	<u>0</u>	<u>60</u>

SHOW
LOCATION IN
SECTION PLAT
lot #22
Black Hawk Area Sub.
SE NE NE

16. Size Hole below casing: 5 in.

17. Static level 30 ft. below casing top which is 1 ft.
above ground level. Pumping level 35 ft. when pumping at 10
gpm for 5 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
<u>TOP SOIL</u>	<u>5</u>	<u>5</u>
<u>CLAY & SAND</u>	<u>20</u>	<u>25</u>
<u>SAND</u>	<u>10</u>	<u>35</u>
<u>GRAVEL & SAND</u>	<u>25</u>	<u>60</u>

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED J. Hickel DATE 5-11-81

White Copy -
Ill. Dep. of Public Health
Yellow Copy - Well Contractor
Blue Copy - Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE
DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST
JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER
SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well

- a. Dug ☐ Bored ☐ Hole Diam. in. Depth ft.
Curb material Buried Slab: Yes ☐ No ☐
b. Driven ☐ Drive Pipe Diam. in. Depth ft.
c. Drilled XX Finished in Drift XX In Rock 8
Tubular Gravel Packed
d. Grout:

(KIND)	FROM (FT.)	TO (FT.)

2. Distance to Nearest:

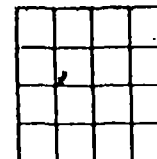
Building 18 Ft. Seepage Tile Field 1000 100
Cess Pool Sewer (non Cast iron)
Privy Sewer (Cast iron) 100
Septic Tank 25 Barnyard
 ing Pit Manure Pile

3. Well furnishes water for human consumption? Yes XX No
4. Date well completed December 14, 1981
5. Permanent Pump Installed? Yes XX Date 12-14-81 No
Manufacturer Red Jacket Type sub Location In well
Capacity 12 gpm. Depth of Setting 38 Ft.
6. Well Top Sealed? Yes XX No Type Martinson
7. Pitless Adapter Installed? Yes XX No
Manufacturer Martinson Model Number BP10
How attached to casing? Threaded nut
8. Well Disinfected? Yes XX No
9. Pump and Equipment Disinfected? Yes XX No
10. Pressure Tank Size 20 gal. Type Well X-trol
Location In basement
11. Water Sample Submitted? Yes XXX No

REMARKS:

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Edna Trull Well No.
Address Imperial Rd.
Driller: Jack Bull License No. 92-606
11. Permit No. 100901 Date November 30, 1981
12. Water from XS sand, gravel 13. County Winnebago
at depth 30 to 48 ft. Sec. 13.6
14. Screen: Diam. 4 in. Twp. 46N
Length: 3 ft. Slot .015 Rge. 1E
Elev.



15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
5	.258 Black	0	45

SHOW
LOCATION IN
SECTION PLAT
SW SE NW

16. Size Hole below casing: XXXX in.
17. Static level 30 ft. below casing top which is 10 inches (X)
above ground level. Pumping level 30 ft. when pumping at 12
gpm for 6 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
black dirt	0	0
sand and gravel	8	48

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED

Jack Bull DATE 1-27-82

Whi Y-
Ill. Dep. of Public Health
Yellow C - Well Contractor
Blue Cop - Well Owner

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, ROOM 6 STATE OFFICE BUILDING SPRINGFIELD, ILLINOIS, 62706. DO NOT WRITE ON EACH GEOLOGICAL AND WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH WELL CONSTRUCTION REPORT

1. Type of Well

- a. Dug _____ Bored _____ Hole Diam. _____ in. Depth _____ ft.
Curb material _____ Buried Slab: Yes _____ No _____
b. Driven _____ Drive Pipe Diam. _____ in. Depth _____ ft.
c. Drilled X Finished in Drift X In Rock _____
Tubular _____ Gravel Packed _____
d. Grout: _____

(KIND)	FROM (FT.)	TO (FT.)
none		

2. Distance to Nearest:

Building 5 Ft. Seepage Tile Field 75
Cess Pool _____ Sewer (non Cast iron) _____
Privy _____ Sewer (Cast iron) _____
Septic Tank 50 Barnyard _____
Leaching Pit _____ Manure Pile _____

3. Is water from this well to be used for human consumption?

Yes X No _____

4. Date well completed April 14-72

5. Permanent Pump Installed? Yes X No _____
Manufacturer Red Jacket Type subm.
Capacity 10 gpm. Depth of setting 50 ft.

6. Well Top Sealed? Yes X No _____

7. Pitless Adaptor Installed? Yes X No _____

8. Well Disinfected? Yes X No _____

9. Water Sample Submitted? Yes X No _____

REMARKS: Water sample reported
safe by Winnebago Co.
Health Dept.

IDPH 4.065
10/68

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Lavern Collins Well No. 1

Address 1303 N. 14th Ave

Driller Ed Greenfield License No. 92-582

11. Permit No. 14F-14192 Date April 7-72

12. Water from sand 13. County Winnebago

at depth 61 to 63 ft. Sec. 13.22

14. Screen: Diam. _____ in. Twp. 41 N

Length: _____ ft. Slot _____ Rge. 1E

Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	T&E 11" FL	0	61
4	Screen (S.S.)	61	63

SHOW
LOCATION IN
SECTION PLAT

SW NE NE

16. Size Hole below casing: _____ in.

17. Static level 35 ft. below casing top which is 1 ft.
above ground level. Pumping level 41 ft. when pumping at 10
gpm for 8 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
<u>sand</u>	<u>0</u>	<u>63</u>

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Ed Greenfield DATE May 7-72

INSTRUCTIONS TO DRILLERS

White Copy -
Ill. Dept. of Public Health
Yellow Copy - Well Contractor
Blue Copy - Well Owner

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE
DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST
JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER
SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well

- a. Dug _____ Bored _____ Hole Diam. _____ in. Depth _____ ft.
Curb material _____ Buried Slab: Yes _____ No _____
b. Driven _____ Drive Pipe Diam. _____ in. Depth _____ ft.
c. Drilled X Finished in Drift X In Rock _____
Tubular _____ Gravel Packed _____
d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)
None		

2. Distance to Nearest:

Building 10 Ft. Seepage Tile Field 100'
Cess Pool _____ Sewer (non Cast iron) _____
Privy _____ Sewer (Cast iron) _____
Septic Tank 50 Barnyard _____
Leaching Pit _____ Manure Pile _____

3. Well furnishes water for human consumption? Yes X No _____

4. Date well completed Feb 16 1977

5. Permanent Pump Installed? Yes X Date Feb 19 1977 No _____

Manufacturer SEA-RITE Type KHP Location IN WELL

Capacity 10 gpm. Depth of Setting 50 Ft.

6. Well Top Sealed? Yes X No _____ Type _____

7. Pitless Adapter Installed? Yes X No _____

Manufacturer LEWIS Model Number 4x1 AWC

How attached to casing? BOLTED

8. Well Disinfected? Yes X No _____

9. Pump and Equipment Disinfected? Yes X No _____

10. Pressure Tank Size 42 gal. Type X-TEK 202

Location IN CEILING SPACE

11. Water Sample Submitted? Yes X No _____

REMARKS:

Water sample reported safe
by Winnebago Co. Health Dept.

Winnebago Co. permit #

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner RICHARD NIELSEN Well No. 1

Address 409 DINGMAN DR.

Driller ED GREENFIELD License No. 92-582

11. Permit No. 57131 Date FEB 25

12. Water from SAND 13. County WINNEBAGO

at depth 58 to 60 ft. Sec. 13

14. Screen: Diam. 4 in. Twp. 66N

Length: 2 ft. Slot 15 Rge. 1E

Elev. _____

15. Casing and Liner Pipe

Diam. (in.)	Kind and Weight	From (Ft.)	To (Ft.)
4	BIK PE. 11"	0	58
4	SS. SCREEN	58	60

SHOW
LOCATION IN
SECTION PLAT

100' N, 100' E SW 1/4
SE SW NE

16. Size Hole below casing: _____ in.

17. Static level 30 ft. below casing top which is 1 ft.

above ground level. Pumping level 30 ft. when pumping at 10

gpm for 1 hours.

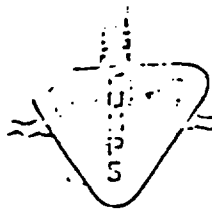
18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
SOIL	2	2
SAND - GRAVEL	42	44
SAND	48 16	60

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED Ed Greenfield DATE March 7 1977

ALLA BAUGHN WELL COMPANY

WELL DRILLING • PUMPS



3400 Madison Street

Rockford, Illinois

963-0451

June 13, 1959

- Pump Repairs
- Chlorinating
- Acidizing
- Shooting

WELL LOG TEST

BELOIT IRON WORKS
(Bockton Plant)

Beloit, Ill.

<u>Bottom</u>	<u>Thickness</u>	<u>Remarks</u>
5'	5'	Black soil
86'	81'	Sand, gravel & boulders w/ clay, dirty
95'	9'	Yellow & brown clay
106'	11'	Sand & gravel w/ clay
125'	19'	Brown clay
128'	3'	Sand
137'	9'	Brown clay
148'	11'	Sand dirty
155'	7'	Clay hard
185'	30'	Sand & gravel & boulders
200'	15'	Clay
235'	35'	Clay, sand
250'		Limestone, bottom of hole

Aquifer used

John H. Allabaugh

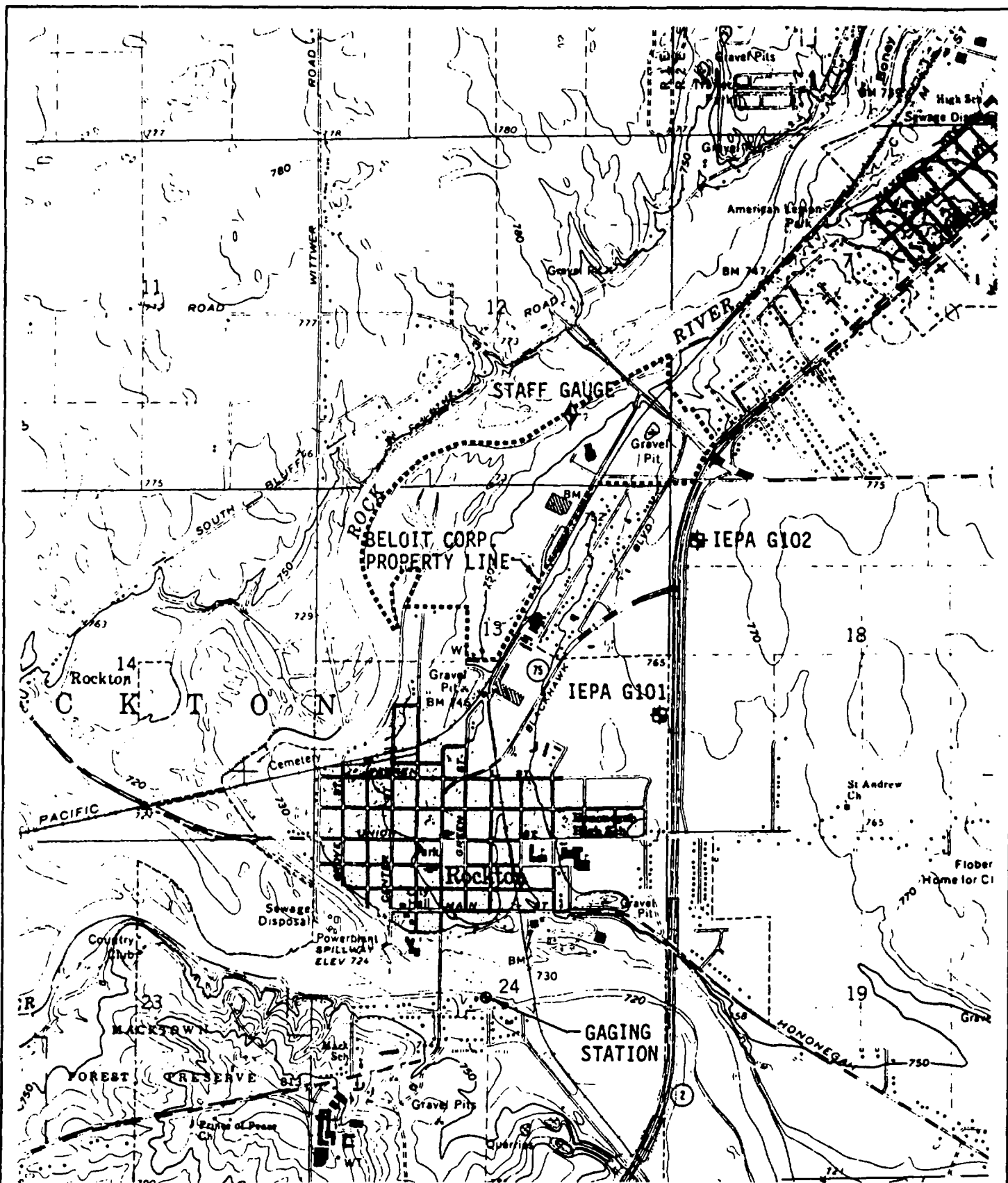
Best formation for setting screen is from 155' to 185' depth.

MADE
MAR 13 1959



PUMPS FOR ALL PUMPING REQUIREMENTS

INJECTOR PUMPS • WATER SYSTEMS • SURGE PUMPS • CENTRIFUGALS • TURBINE PUMPS • SUBMERSIBLES



NOTE:

REGIONAL TOPOGRAPHY OBTAINED FROM
USGS 7.5 MINUTE SOUTH BELOIT USGS
QUADRANGLE MAP, DATED 1971.



SCALE: 1"=2000'

REGIONAL TOPOGRAPHY



GROUNDWATER INFORMATION REVIEW
BELOIT CORPORATION
BLACKHAWK FACILITY

DWN SJP

APP'D *AJS*

DATE 11-26-86

C12749-A1